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ADDRESSES AND ORIGINAL ARTICLES

BRITISH DYSENTERIC INFECTIONS *

BY ARTHUR F. HURST, D.M. Oxon., F.R.C.P. Lond.
SENIOR PHYSICIAN TO GUY'S HOSPITAL, LONDON; AND
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DIRECTOR OF THE BACTERIOLOGICAL DEPARTMENT

History of Dysentery in Great Britain

SCATTERED references to dysentery or bloody flux are found in the chronicles of the fourteenth, fifteenth, and sixteenth centuries. In the early part of the seventeenth century spotted fever, bloody flux, and small-pox were the prevalent epidemics among the rich as well as the poor in England. We owe the first clinical description of dysentery in England to Sydenham, who observed the epidemics which occurred in London in 1669, 1670, and 1671. It set in at the beginning of the autumn and declined at the approach of winter. The motions were frequent, slimy, often streaked with blood, and attended with griping. Though not infrequently fatal to adults, it was much more so to old men, but was remarkably harmless in infants.

Throughout the eighteenth century there were many epidemics in England, the incidence and mortality varying greatly from year to year. Mark Akenside had more than 130 cases in his wards at St. Thomas's Hospital between 1758 and 1762. It attacked the poor more than the rich, children more than adults, and convalescents from acute fevers and lying-in women were specially liable to be affected.

Sporadic cases continued to appear every autumn and to disappear with the frosty weather of November and December until 1800, when there was again an extensive epidemic in London. The only great dysenteric epidemics of the nineteenth century followed the hot summers of 1825 and 1826, the latter being probably the hottest and driest of the century. Throughout the nineteenth century dysentery continued to be common in asylums, prisons, workhouses, and barracks, and occasional small epidemics were observed in villages.

There is no doubt that English dysentery was always of the bacillary type. Thus William Baly, physician to Milbank Prison, in his Goulstonian lecture for 1847 notes that among the many hundreds of cases of dysentery he had observed in the prison during the previous seven years there was not one complicated with hepatic abscess, which was a common complication of dysentery in India, where future research was to prove that amœbic dysentery, which is the more common variety in India, is the only form which gives rise to hepatitis.

Actual proof of the nature of the British infections could not, however, be obtained until the researches of Shiga, Kruse, and Flexner between 1898 and 1902 made it possible to identify the different types of dysentery bacilli, and in 1904 Eyre obtained for the first time bacteriological evidence that the dysentery which occurred in English asylums was caused by infection with the *B. dysenteriæ*. In 1912 Nabarro isolated the dysentery bacillus from a child who had been attending the Great Ormond-street Hospital for many years as a case of recurrent colitis. Since then he and others have found that many cases of summer diarrhœa in small children, as well as cases diagnosed as chronic colitis, are caused by Flexner's bacillus.

Between 1904 and 1914 hardly a year passed without the discovery of one or more mild dysentery epidemics in towns, villages, and institutions, the causal organisms being classified simply as Shiga's or Flexner's strain of *B. dysenteriæ*. The work of Andrewes and Inman, Sonne, and others during the war made it possible to classify dysenteric infections with much greater accuracy by the use of highly specific agglutinating sera. At the present time four main types are recognised—Flexner and atypical Flexner (Sonne) strains and Shiga and atypical Shiga (Schmitz) strains. The first two are relatively common, the second two extremely rare in Great Britain.

From 1922 to 1934 between 345 and 924 cases of dysentery were notified each year in England and Wales (Table I.). Of the 763 cases notified in 1934 450, with 44 of the 103 deaths, occurred in mental hospitals. The infection was almost always due to the Flexner or Sonne bacillus.

TABLE I

Number of notified cases of dysentery and deaths in England and Wales since it became a notifiable disease on March 1st, 1919. (The figures include a comparatively small number of cases of amœbic dysentery.)

Year.	Cases.	Deaths.	Year.	Cases.	Deaths.
1919	1657	435	1927	440	93
1920	1353	254	1928	683	155
1921	1223	261	1929	573	98
1922	789	216	1930	538	97
1923	484	149	1931	809	116
1924	388	130	1932	924	133
1925	345	135	1933	783	92
1926	530	142	1934	763	103

Modern bacteriological investigations and the clinical records of the past indicate that the dysentery of Great Britain must always have been predominantly of the Flexner and allied Sonne types, although the occurrence in earlier days of occasional outbreaks of high mortality makes it probable that Shiga infections were not quite as uncommon as now.

Spread of Infection in Great Britain

Rural outbreaks.—Modern public health administration, though very effective in towns, has not succeeded in removing endemic infection from rural districts. Turner has related experiences which show how small villages in agricultural districts, where flies breed freely and sanitary arrangements are primitive, may act as natural reservoirs of bacillary dysentery. The well from which a family drew their water dried up, and water was carried from a neighbouring stream in barrels and emptied into the dried-up well. Soon afterwards several members of the family developed symptoms of acute dysentery and died, and Flexner's bacillus was isolated from their stools. Before long he was called to a neighbouring village of 150 inhabitants to see a man with similar symptoms; in this case Sonne's bacillus was isolated. Ten other cases developed within a week or two. On inquiry it was found that nearly every autumn diarrhœa, often bloody, went through the village, but the inhabitants were so accustomed to it that they did not send for a doctor unless somebody was very ill.

Effect of wars.—From its geographical distribution and the absence of hepatic complications, it is certain that the dysentery which attacked the British army in the Crimea and in the South African War was

* Based on addresses to the epidemiological and infectious diseases section of the Congress of Hygiene held at Edinburgh, May 29th, 1936.

bacillary. Out of the 30,000 British soldiers who fought in the Crimea 7883 suffered from dysentery, and of these 2143 died; in the South African War there were 1342 deaths among 38,108 cases.

In the Great War bacillary dysentery first appeared in epidemic form at Gallipoli in August, 1915, and from 1916 till the end of the war it continued to be a serious source of invaliding in Mesopotamia, Salonika, and Palestine. A milder form developed in France and Flanders in July, 1916, and recurred in the autumn of 1917 and 1918. Its incidence varied between a maximum of 126 cases per 100,000 on the Western front in September, 1916, and 7900 per 100,000 in Mesopotamia in 1916. Moreover, no less than 1 per cent. of all convalescent soldiers returning from the Near East, other than those known to have had dysentery, were found to be Flexner carriers. In the East Shiga and Flexner infections were about equally common, but 85 per cent. of cases in the West were of the Flexner type. The mortality was low in every theatre of the war, the maximum being at Gallipoli, but even there it was only 5 per cent.

It would be natural to expect that the endemic dysentery of Great Britain was reinforced by infected soldiers after the Crimean, South African, and Great Wars. There is good evidence that dysentery did increase in England after the Great War (Table I.). The importation was mainly of the Flexner type, although in the East, the natural home of dysentery, Flexner and Shiga strains are about equally prevalent, for among the 3 per cent. of all patients who contracted dysentery and who became chronic carriers the proportion of Flexner to Shiga infections was about 4 to 1. The Shiga carrier almost invariably remains a relatively sick man, whereas the Flexner carrier is often quite fit, so that the former was likely to be recognised and kept under observation until the infection had died out, whereas the latter was more likely to return home and spread the infection. Immediately after the war a few Shiga infections were recorded; now they have almost disappeared. Until 1925 the percentage of true Flexner strains was about 80, but it has since fallen to about 50, a higher proportion of the cases being of the Sonne type. The temporary increase of Flexner infections was due to a rise in imported cases during the war, the present incidence representing mainly the endemic disease, in which Flexner and Sonne infections are equally common.

To a much smaller extent the same form of importation must continue in times of peace. In the records of the past ten years a surprisingly high percentage of cases of typical Flexner infection can be traced back to someone who has brought the organism from overseas. Thus an ex-soldier from the Near East, originally infected in 1918, caused a local outbreak in England nine years later, and a boy, who over a year previously had clinically recovered from dysentery in Baghdad, started a severe outbreak when he joined a school in England.

Infection from cruises.—Hern (1935) has recently drawn attention to the possible spread of bacillary dysentery in England as a result of the increasing popularity of pleasure cruising. He records the case of a patient who developed severe diarrhœa six days before the end of a fortnight's cruise. The day after landing Flexner's dysentery bacillus was isolated from the stools, which contained abundant blood and pus. In addition to Hern's patient at least a hundred passengers developed diarrhœa. The epidemic broke out about forty-eight hours after sailing and before any port of call had been reached, so that the infection presumably was conveyed to the food by a carrier among the staff who had contracted it during an earlier cruise. As Hern points out, "if we take ten days as the normal average period of infectivity, it follows that only those cases which occurred in the first two days of the epidemic can have been safe neighbours by the time they reached home; of the rest each must have been a potential focus for the start of a fresh outbreak in this country."

Hill (1935) relates his experience of another cruise, in which after leaving Istambul he and others were laid up with an acute attack of dysentery, which confined him to bed till he reached England. A friend was taken ill immediately he reached home and died from dysentery.

From our own observations we are inclined to think that the most frequent source of infection is food taken at ports of call where dysentery is common, and we have seen several patients with severe chronic diarrhœa which developed after an acute attack of food poisoning contracted after a meal on shore. In one case both the *Amœba histolytica* and Flexner's bacillus were found in the stools; the former infection was quickly cured with emetine, but chronic ulcerative colitis, which lasted over three years, developed, although during the last year Flexner's bacillus could no longer be isolated from sigmoidoscopic swabs.

In some boats notices are hung in prominent places warning passengers to drink no water and to eat no raw vegetables or fruit at ports of call. As provisions for shore excursions can always be provided on board, it should be possible to avoid all risk of infection by these simple precautions.

What is British Dysentery?

Epidemic diarrhœa is so common that it is essential to have a clear conception as to what constitutes "dysentery." In this country a purely bacteriological definition will not suffice. To deserve the name of dysentery an infection must be one which is associated, in the severe cases at least, with the passage in the stools of much epithelial debris with pus and blood, derived from acutely inflamed colonic mucous membrane with macroscopic or at least microscopic areas of ulceration.

It is common knowledge that all the bacilli biologically classified as *B. dysenteriæ* (Shiga and Flexner) can produce this type of illness. Can the atypical but allied strains, such as those of Schmitz and Sonne, give rise to conditions deserving the name dysentery and all that it implies in clinical and public health work? We have no doubt that they can. The dysentery produced by these atypical strains is mild and the outbreaks quite localised. But the nature of the disease is essentially the same, and a certain number of severe cases do occur.

Bacteriological research has, however, to some extent brought confusion into the question of the occurrence of dysentery in Great Britain. In pre-bacteriological days the word dysentery was synonymous with "bloody flux," the diagnosis being made when a patient developed diarrhœa with the passage of blood. Nowadays the isolation of a dysenteric organism from the stools and its agglutination by specific agglutinating sera or by the patient's own serum are required before a diagnosis is made. This leads to fallacies of two kinds. In the first place in epidemics of typical bacillary dysentery it is rarely if ever possible to isolate the *B. dysenteriæ* in every case, but no doubt is felt that those patients in whose stools it is not isolated are suffering from bacillary dysentery. It would therefore be logical to assume that a sporadic case with typical symptoms and morbid anatomy might also be true dysentery in spite of

failure to isolate a dysenteric bacillus. Secondly it is now known that numerous epidemics of mild diarrhœa, sometimes in villages and sometimes in schools, hospitals, and other institutions, are caused by infection with Sonne's dysenteric bacillus, which is isolated from the stools in these cases, although clinically they may bear no resemblance to classical dysentery or bloody flux.

R. E. Smith (1931) has described an outbreak of gastro-enteritis caused by Sonne's bacillus in a house at Rugby containing 58 boys. Between July 15th and 22nd twenty boys, their housemaster, the cook, and two dormitory maids were affected. Of these eleven had vomited and five others had nausea—presumably caused by gastritis. Twelve had diarrhœa for one to nine days; of these nine passed mucus and only four blood. The Sonne bacillus was found in nine out of eighteen cases investigated—all of the nine having diarrhœa. Of the twenty-one cases only the four who passed blood could be regarded as clinical cases of dysentery, although all were clearly due to infection with the Sonne bacillus. It would seem more logical to describe the epidemic as one of "Sonne gastro-enteritis" than of "Sonne dysentery."

It is not easy to classify the conditions associated with infection by the various other non- or late-lactose fermenting bacilli, which biologically show a distant resemblance to *B. dysenteriæ*. When infecting a previously healthy person, they usually produce nothing more than a gastro-entero-colitis of varying severity, and very rarely a condition of true dysentery or bloody flux. On the other hand, they can often be isolated in large numbers from stools containing blood and pus in cases of ulcerative colitis which are indistinguishable from chronic dysentery. It is difficult to believe that they have no connexion with the inflammatory process, and the question is discussed in a later section of this paper.

We have omitted consideration of amœbic infections, which are occasionally observed in Great Britain, because their inclusion under the term "dysentery" leads to still more confusion, as the only thing common to bacillary and amœbic dysentery is the bloody flux—the morbid anatomy, course, complications, natural distribution, and treatment being entirely different.

Sporadic Acute Dysentery

It is probable that if all cases of acute diarrhœa occurring in England, however short in duration, and especially those in which blood as well as mucus is present in the stools, were examined bacteriologically, bacillary dysentery would be found to be much less rare than is generally believed. Many cases of acute diarrhœa are of such short duration that they are not seen at all by a doctor. In others the stools are not kept for his inspection, and it must be comparatively rare for a general practitioner to consider it worth while putting his patient to the expense of a bacteriological examination of the stools for an attack of diarrhœa which does not last for more than a few days.

One of the few cases of the kind which we have had the opportunity of seeing was in a boy of sixteen at a public school. There were no other cases of diarrhœa and there was no history of recent contact with anybody suffering from a similar complaint. He was seen with Dr. Bradley in 1927 on the morning of the third day of his illness; he had a high temperature, his stools contained large quantities of blood with pus and mucus, and the appearance with the sigmoidoscope was typical of ulcerative colitis. Flexner's bacillus was isolated from a stool passed on the first day. He was given 40 c.cm. of anti-dysenteric serum intravenously and recovered completely within a fortnight. There has been no recurrence in the eight years which have since elapsed.

In another sporadic case of acute diarrhœa developing without obvious cause and lasting only forty-eight hours, the mucus, which was slightly blood-stained, gave *B. asiaticus* on culture, but a week later the stools were normal and gave only the usual *B. coli communis* and enterococci.

A woman of 23 was sent to New Lodge Clinic on account of chronic dyspepsia dating from an acute attack of abdominal pain with fever, vomiting, and diarrhœa four years before, which was diagnosed as acute appendicitis, although at the operation the appendix was regarded by the surgeon as only part of a widespread inflammation, the whole colon being abnormally red. The dyspepsia proved to be due to achlorhydric gastritis, which was no doubt a sequel of the acute gastritis, which formed a part of the gastro-entero-colitis at the acute onset. Although there had never been any recurrence of diarrhœa, Flexner's bacillus was isolated from the stools. This case is thus another example of an unrecognised attack of an acute dysenteric infection.

It is quite common in ordinary chronic cases of ulcerative colitis to obtain a history of an acute onset with an illness exactly resembling acute dysentery. The first acute attack often lasts only a few days and a doctor may never have been consulted, but the spontaneous recovery is followed by one or more relapses, one of which passes into the chronic condition of ulcerative colitis. When such patients ultimately come into hospital and thorough bacteriological investigations of the stools and sigmoidoscopic swabs are at last carried out, they have generally been ill so long that the original infection has died out or become so attenuated as to escape recognition unless many successive examinations are made.

Chronic Dysentery

In the chronic dysentery of tropical countries the *B. dysenteriæ* can persist for many months in the mucous membrane, though it becomes increasingly difficult to cultivate it from the fæces, and finally it may prove impossible. In the first of the following cases the history was typical of ulcerative colitis, and the sigmoidoscopic appearance of the bowel was quite indistinguishable from that seen with the common type of the disease as it occurs in England; yet the onset in Salonika and the discovery of Flexner's bacillus during the first attack and again from a sigmoidoscopic swab nearly two years later showed that the condition could equally well be regarded as chronic bacillary dysentery. In the other cases a dysenteric organism was isolated at the onset of the illness, but by the time the patients came under observation with symptoms and sigmoidoscopic appearances typical of ulcerative colitis all attempts to isolate it failed. Yet the history would justify a diagnosis of chronic dysentery.

Albert W., aged 35, had an attack of acute dysentery in December, 1918, whilst serving in Salonika. Flexner's bacillus was isolated from his stools. He was discharged from hospital in March, 1919, and sent to England. There was now no blood in his stools, but he still had diarrhœa. In March, 1920, the old symptoms returned. His stools became increasingly frequent and loose, and blood and mucus were invariably present in them. By September he was passing seven stools a day; on Sept. 12th he passed half a pint of bright red blood and was admitted to Guy's Hospital under the care of A. F. H. His stools contained small quantities of semi-liquid fæces with blood, mucus, and pus. He was sigmoidoscoped the day after admission, and innumerable shallow, irregular ulcers were seen. The intervening mucous membrane was swollen and very red, and bled directly it was touched. A swab taken from the surface of an ulcer showed the presence of an aberrant type of Flexner's bacillus. The patient was given intravenous injections of polyvalent antidysenteric serum. In ten days the stools were formed and contained neither blood nor pus; a second sigmoidoscopic examination

showed that every ulcer had healed and that the mucous membrane was only very slightly inflamed. A fortnight later all signs of colitis had disappeared.

An officer, aged 55, contracted bacillary dysentery at Gallipoli in June, 1915. Flexner's bacillus was isolated from his stools. Diarrhœa with the passage of blood and pus continued in varying intensity until he came under observation in February, 1920, when numerous cultures of stools and one of a sigmoidoscopic swab failed to grow any pathogenic organism. He was very emaciated and weak. Serum failed to help and he died from exhaustion shortly after the performance of an appendicostomy. Without the history of the onset in Gallipoli and the discovery shortly afterwards of Flexner's bacillus the case would have been regarded from the symptoms and sigmoidoscopic appearance as typical of very severe ulcerative colitis.

A man of 42 had severe diarrhœa in India in 1917. He recovered, but in 1920 he had an attack in England of diarrhœa and passed blood in his stools. From that time till 1936 with short intervals of freedom he had symptoms of ulcerative colitis. In 1926 Flexner's bacillus was isolated from his stools and his blood agglutinated the organism and stock Flexner's bacillus up to 1 in 400. Numerous cultivations from stools and sigmoidoscopic swabs since then have failed to reveal any pathogenic organism, and his blood ceased to agglutinate Flexner's bacillus in 1928.

Bockus (1936) records a case of typical ulcerative colitis with polyposis following an attack of acute bacillary dysentery, in which Flexner's bacillus was isolated from the stools and serum agglutination was positive. Six months after the onset, when the patient was first seen by Bockus, repeated cultures and agglutination tests were negative.

Ulcerative Colitis and Bacillary Dysentery

In a description of the morbid anatomy of sporadic cases of chronic bloody flux occurring in England, Wilks in 1875 referred to the disease as ulcerative colitis, a name which has been adopted in Europe and America for this condition, but he pointed out that it was anatomically indistinguishable from dysentery. Saundby in 1906 and Hawkins in 1909 first suggested that ulcerative colitis as it occurs in England is a form of chronic bacillary dysentery.

During the war one of us (A. F. H.) had frequent opportunities at Lemnos and at Salonika of sigmoidoscoping patients with dysentery. It was recognised at once that amœbic dysentery presented a characteristic picture which bore no resemblance to that of bacillary dysentery, but that it was impossible to distinguish the latter from the ulcerative colitis with which we were already familiar in England. Prof. Klemperer tells us that he has come to the same conclusion from his large experience of autopsies of bacillary dysentery in the Austrian army during the war and of ulcerative colitis in New York in more recent years. He is convinced that the two diseases have the same origin. In his recent Lettsomian lectures Manson-Bahr admits that the sigmoidoscopic appearance of the bowel and the naked-eye and microscopical characteristics of the stools in "ulcerative colitis" are indistinguishable from those of chronic stages of bacillary dysentery.

In 1923 Dudgeon isolated Flexner's bacillus in two cases from material obtained from the surface of an ulcer examined through a sigmoidoscope. The same bacillus was isolated by Thorlakson and Cadman of Winnipeg in 1928 in six out of nine from material obtained by scraping the base of an ulcer with a sharp curette, though they had never discovered it in stools or in ordinary swabs from the ulcer surface.

In 1931 Winkelstein isolated a dysentery bacillus in four cases in adults in New York, and by 1935 he had with Herschberger obtained positive cultures in three additional cases; all seven were confirmed by agglutination tests. They also found that the serum in 27 out of 120 consecutive cases of ulcerative colitis agglutinated laboratory strains of dysentery organisms. In 1934 Mackie of New York recorded his investigations on the bacteriology of 83 consecutive cases of ulcerative colitis. In 17, or 20 per cent., of the 83 he isolated dysenteric organisms from swabs obtained through the sigmoidoscope. The majority were of the Flexner type, less commonly the Sonne, and in two Shiga's bacillus was isolated. In many instances frequent cultures had to be made over a considerable period before a positive result was obtained; in one case cultures were made through the sigmoidoscope weekly for eighteen weeks before a dysenteric bacillus was recovered. In a control series of 102 patients without ulcerative colitis a dysenteric bacillus was isolated in two, but both gave a history suggestive of dysentery and both were suffering at the time from acute diarrhœa.

In 1930 we isolated Flexner's bacillus, which was agglutinated by the patient's serum, from a swab obtained from the raw surface left after we had snared a polypus in the rectum of a woman, aged 36, who had had very severe ulcerative colitis since 1925 and had developed two long strictures and multiple polyposis. Numerous examinations of stools and swabs taken from ulcers during the five years of her illness had only shown *B. coli* and enterococci. Since then one of us (F. A. K.) has isolated Flexner's bacillus from sigmoidoscopic swabs in five other cases, Flexner variants in three cases, and the Sonne bacillus in one case. None of these patients had ever been abroad or had been associated with anybody known to have dysentery. Three of the Flexner cases, the Sonne case, and the three Flexner variants were in the New Lodge Clinic series of fifty-four patients.

In nearly all the above cases dysentery bacilli were recovered from swabs or scrapings from ulcers and not from the stools. The fact that only 13 per cent. of our cases gave positive cultures of dysentery bacilli does not disprove their dysenteric origin, as it is notoriously difficult to isolate the *B. dysenteriæ* from the stools of patients in the tropics suffering from typical dysentery only a week or two after the acute stage has passed, and we have already described a number of cases of undoubted chronic dysentery in which the organism had been isolated in the early stages of the illness and had finally disappeared from the stools.

If a patient with ulcerative colitis is actually suffering from chronic bacillary dysentery he must be classed as a carrier, even if we cannot grow the organism from his fæces. From 40 to 80 per cent. of proved carriers were shown during the war to agglutinate Flexner bacilli in dilutions of 1 in 200 or higher. But from our own records in only 6 out of a total of 70 cases of ulcerative colitis, in which the bacilli were not isolated from the stools, could any Flexner agglutinins be detected, and then never in a higher dilution than 1 in 50. As it is well established that a high proportion of normal sera agglutinate Flexner's bacillus in a dilution of 1 in 50 or even 1 in 100, the serological evidence indicates that the great majority of our cases of ulcerative colitis were not "carriers"—i.e., were not actively infected with Flexner dysentery at the time. That does not prove, of course, that they never had been infected with Flexner's bacillus, because it has been repeatedly shown that after convalescence the dysentery agglutinins disappear very rapidly from the blood.

These apparently contradictory findings can, however, be reconciled. It is quite possible that the original damage was done to the intestinal mucosa by a true dysentery infection, which then died out, but left the colon in such a state as to fall an easy

prey to subsequent attacks by other and less virulent organisms. Table II. is an analysis of the bacteriology of the fæces and of sigmoidoscopic swabs taken from fifty-four cases of ulcerative colitis in New Lodge Clinic.

TABLE II

Bacteria other than B. coli communis *and enterococci isolated from fæcal cultures (McConkey) and blood agar in a consecutive series of 54 cases of ulcerative colitis. Organisms of Groups C, D, and E were recorded only when present in large numbers*

	Cases.
(A) Pathogenic dysentery-producing strains:	
B. dysenteriæ Flexner	3
B. dysenteriæ Flexner (very late lactose +, mannite +, dulcite −, non-motile)	3
B. dysenteriæ Sonne	1
(B) Pathogenic, enteritis-producing strains:	
B. enteritidiitis Gaertner	1
Salmonella morgani	11
B. asiaticus	11
(C) *B. coli* variants and other coliform strains of very doubtful pathogenic power:	
Parenteric bacilli (unclassified motile strains, lactose −, saccharose +)	11
B. coli hæmolyticus	2
(D) Proteolytic strains of possible secondary pathogenic power:	
B. proteus	5
B. pyocyaneus	2
(E) Virulent micrococci:	
Streptococcus hæmolyticus	1

The sera of all the patients referred to in Group A agglutinated their bacilli in dilutions of at least 1 in 100. In Group B the Gaertner's bacillus was agglutinated by the patient's serum up to 1 in 100, two of the Morgan's bacillus infections gave positive agglutination up to 1 in 50, and a similar result was obtained with three of the *B. asiaticus* strains. Infection with the organisms in Group A may well have been the primary cause of the ulcerative colitis. With regard to the Groups B to E it is important to note that in several cases more than one of the organisms were isolated at the same or at different times in the same patient. Successive relapses sometimes coincided with the isolation from the colon of entirely different potentially pathogenic bacteria. Such entero-colitis-producing strains, sometimes of definite, sometimes of doubtful pathogenicity, are much more frequently found in the fæcal cultures of patients with ulcerative colitis than in those of normal people, and that they have nothing to do with the clinical condition is highly improbable. If in previously healthy intestines these strains are capable of setting up irritation and causing diarrhœa, their possible effect upon the already weakened colon in ulcerative colitis must be far greater. They may have gained access to the bowel at the time of the original infection, or at a later date, in which case they may have been the existing cause of a relapse.

The bacteriological evidence suggests therefore that if chronic ulcerative colitis arises from infection with Flexner dysentery bacillus, the infection must generally play no more than the initial part of damaging and lowering the natural resistance of the intestinal mucosa. In a few cases the Flexner infection may persist, and these cases are examples of true chronic dysentery, but in the majority the Flexner bacilli die out completely and other damaging influences, often secondary infections, affect the colon, producing the characteristic chronic disease with its great tendency to relapse.

The apparently non-infective nature of ulcerative colitis has been quoted as evidence against its dysenteric origin. If the original dysenteric infection is no longer present in the majority of cases, the non-infectivity is explained. Moreover the sanitary arrangements in the average household are sufficiently good to account for the rarity with which ulcerative colitis appears to be transmitted. Even the familial incidence of acute dysentery in England is small. Thus only a single individual was involved in 44 out of 60 families with a Flexner dysentery infection and 39 out of 44 families with a Sonne infection observed in Aberdeen between 1919 and 1928 (Fraser and Smith).

In the New Lodge Clinic series of fifty-four cases of ulcerative colitis there was one example of such transmission. In 1929 two sisters living in the same house in North London developed the disease within a few weeks of each other. One died four years later. The other came under our observation in 1936 when 43 years old, having had symptoms of ulcerative colitis of varying intensity for seven years. She improved rapidly after treatment with antidysenteric serum and at the end of six weeks the mucous membrane of her colon appeared to be completely normal.

Conclusions

1. Bacillary dysentery has been endemic in Great Britain since the fourteenth century, and the mild and scattered epidemics of to-day are the direct descendants of the serious and widespread epidemics of the seventeenth and eighteenth centuries, reinforced by infection brought home by soldiers from the Crimean and South African Wars and the Great War, travellers from the East, and recently by passengers on pleasure cruises.

2. The majority of cases in Great Britain sufficiently severe to deserve clinical description as dysentery are Flexner infections. A few are caused by bacilli of the Schmitz (atypical Shiga) type, and a small proportion of the comparatively common Sonne (atypical Flexner) infections give rise to true dysentery. Shiga dysentery is almost unknown.

3. Many cases of infection with dysenteric organisms, especially with the Sonne bacillus, do not present the essential symptom of dysentery—a "bloody flux."

4. Ulcerative colitis is probably a sequel of an acute or subacute infective colitis. In many cases a dysentery bacillus is the original infective agent. Unless promptly treated, preferably by a specific antiserum, the condition may become chronic. In a few cases the dysenteric infection may persist; more commonly the organism responsible for the original infection disappears from the intestines and the specific agglutinins disappear from the blood. The persistence of the disease and its recurrences may then be caused by various entero-colitis-producing bacilli, swallowed in the food at the same time as or subsequent to the original infection. In this way the apparently contradictory bacteriological findings can be explained.

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OPTIC ATROPHY AS THE PRESENTING SIGN IN PERNICIOUS ANÆMIA*

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THE territory of medicine abounds in barren wastes, but their number and extent is rapidly diminishing. Rarely the pasture land increases because the mind of a genius discovers a new fertiliser. But more commonly it is the novel and vigorous application of well-established methods of fertilisation to a hitherto waste area that renders it productive. Although Laennec introduced auscultation in 1819, it was not until a century later that cephalic auscultation became a part of the routine neurological examination. Hence the clinical recognition of intracranial blood-vessel tumours is of comparatively recent date. But it is not only in the field of clinical methods that this failure to apply established principles to the problems of medicine is evident. We are often blind to the possibility that pathological tissue changes, which we recognise as occurring frequently in one organ of the body, can and do occur in other organs, and give rise to characteristic clinical features. Thrombosis in the cerebral arteries was noted clinically by the teachers of the oldest member of this Association, and yet, though coronary artery thrombosis had been described as a pathological entity in the latter half of the nineteenth century, the history of its clinical recognition dates back barely a dozen years. Renal artery thrombosis in the old, with resulting symptomless hæmaturia, is still unfamiliar to many clinicians.

Disturbances of vision accompanying pernicious anæmia have long been recognised. These are associated with such lesions as retinal œdema and hæmorrhages, thrombosis of the central artery or vein, chorioretinal degenerations, and very rarely, hæmorrhage into the optic nerve. But the occurrence of amblyopia as the *presenting* symptom in pernicious anæmia before blood changes are clinically manifest appears to be still unrecorded. This omission is the more noteworthy since two facts are now well established regarding the changes in the nervous system accompanying pernicious anæmia: first, that these are widespread, involving not only the brain and spinal cord but also the peripheral nerves; and secondly, that their clinical manifestations might precede, for a variable and sometimes lengthy period, the clinical evidence attributable directly to the anæmia. These two facts render it likely on a-priori grounds that optic nerve changes might occur as the earliest manifestation of pernicious anæmia; and the following two cases are, I submit, adequate evidence of this sequence.

FIRST CASE

Male, aged 55; licensee. Admitted to the Liverpool Royal Infirmary on March 18th, 1935, complaining of failing vision for a year. Married: one child aged 28 quite well. Father died of senility at 80; mother alive and well aged 81. Two brothers and two sisters well. Wife well; no miscarriages. No family history of blindness. The patient's only past illness was dysentery (? type) in 1917; he denied venereal disease. He had never smoked more than 1 oz. of tobacco weekly and was teetotal. He had first noticed his vision failing a year before admission. This visual failure had gradually increased recently at a more rapid rate. There was no history of diplopia, headache, pains, paræsthesiæ, or weakness of the limbs, and he had experienced no difficulty in walking. His appetite had been good and there were no dyspeptic symptoms. The bowels were regular; there were no urinary discomforts.

He was well nourished and showed no pallor of skin or mucous membranes. There was no œdema, no thyroid enlargement, no palpable lymphatic glands, and no clubbing of the fingers. The skull was normal to palpation, percussion, and auscultation. His intelligence, memory, and concentration were normal. His smell was normal. The report on his eyes was: right vision 6/60; left vision 6/36; visual acuity admits of no improvement with lenses; no ophthalmoplegia; media clear: both discs pale, especially right; no retinitis; slight concentric contraction of visual fields to 2 mm. white; tension (McLeay tonometer)—right eye 30 mm., left eye 25 mm. The pupils were equal, circular, central, and regular, and reacted normally to light, both directly and consensually, and to accommodation. All ocular movements were full; there was slight lateral rhythmic nystagmus on looking to the right and left with quick component towards the fixation-point. There was no sensory change over the face and no paresis of the muscles of mastication. Facial movements were normal. Hearing was good. There was no dysphagia nor dysphonia; the palate and vocal cords moved normally. There was no paresis of trapezius or sternomastoids. The tongue protruded normally and showed neither wasting nor tremor.

In the upper and lower limbs, and trunk, power was normal; there was no sensory loss to touch, pin, heat, cold, vibration, or joint sense. Both deep and superficial reflexes were present and symmetrical, both plantar responses being flexor. There was no incoördination and the gait was normal. No involuntary movements were seen.

The heart was normal in size, shape, sounds, position, and rhythm; the blood pressure was 126/78, the pulse-rate 80, and there was no gross arterio-sclerosis either peripheral or retinal. The chest moved well and symmetrically, percussion note and breath sounds were normal, and no adventitious sounds were heard. The teeth were deficient and slightly carious; the tongue was clean and moist but not depapillated; the tonsils were normal and there was no evident pharyngeal sepsis. Abdominal examination revealed no localised tenderness, rigidity, distension, or tumour. The urine was acid, specific gravity 1020, and free from sugar, albumin, excess of urobilin, pus cells, and casts.

Radiography of the skull (March 20th, 1935) showed no bone change and the pituitary fossa appeared normal in size and shape. The blood Wassermann reaction (March 21st) was completely negative. The cerebro-spinal fluid pressure was 145 mm. of water and showed normal responses to jugular and abdominal compression; it was clear with normal protein content, less than one cell per c.mm., and showed no significant change in the gold curve; the Wassermann reaction in all dilutions was negative. Examination of the ears, nose, and throat revealed no evidence of disease; nor did radiography (April 2nd) reveal any evidence of infection in the accessory air sinuses.

A diagnosis of optic atrophy, cause undetermined, was made.

The patient returned to hospital on Sept. 3rd, 1935, saying that two months previously he had begun to experience easy fatigue; indeed, he was unable to walk more than 20 yards without marked exhaustion; there had in the preceding two months been increasing pallor and flatulence immediately after meals; his appetite had declined. His vision despite the increasing evidences of anæmia had deteriorated but slightly. There were, however, no other subjective discomforts.

On examination he showed marked pallor with a lemon-yellow tinge of the skin and mucous membranes. There was no evidence of recent wasting, no petechiæ, and no enlarged lymphatic glands were palpable. His heart remained satisfactory, but his blood pressure was 102/50, with pulse-rate 84. His lungs were clear. His tongue now showed small areas of superficial depapillating glossitis. Abdominal examination was again negative. The vision

* Communicated to the Association of British Neurologists, Edinburgh, June 12th, 1936.

had deteriorated to 6/60 in both eyes; the pallor of the discs was more marked and the pupillary response to light was sluggish, but no other evidence of nerve involvement was found. His urine showed slight excess of urobilinogen but was otherwise negative. His blood count on Sept. 5th was:—

Red cells	1,730,000	Polymorphs	65%
White cells ..	4,300	Lymphocytes ..	31%
Hæmoglobin ..	30%	Monocytes	1%
Colour-index ..	1·7	Myelocytes	3%

Normoblasts, poikilocytes, and anisocytes present. Halometer: P.A. side.

Two days later another observer (Dr. Howel Evans) reported:—

Red cells	1,744,000	Polymorphs	69%
White cells ..	3,908	Lymphocytes ..	27%
Hæmoglobin ..	32%	Monocytes	3%
Size of red cells (halometer) ..	8·0μ	Eosinophils	0%
		Basophils	1%

The stained film agrees with the halometer reading; there is marked macrocytosis; polychromasia, anisocytosis, and nucleated red cells are present, as are a few megaloblasts. The white cells show little variation from the normal.

He was given Campolon intramuscularly in doses of 4 c.cm. daily from Sept. 7th to 16th, when his blood had improved to: hæmoglobin 55 per cent., red cells, 2,200,000. Campolon was continued in doses of 4 c.cm. on alternate days, and by Oct. 1st his hæmoglobin was 60 per cent., with red cells 3,000,000. Radiography of the alimentary tract showed no abnormality and his gastric analysis (Oct. 4th) showed complete achlorhydria with a low total acidity. By the 21st his hæmoglobin had improved to 90 per cent. and his red cells were 4,000,000. He observed subjectively an improvement in his vision. He continued with campolon 4 c.cm. twice weekly and by Feb. 4th, 1936, his hæmoglobin was 97 per cent., with red cells 4,360,000, and his vision had improved considerably. He was last seen on May 5th when his visual acuity had improved to 6/12 in both eyes. He is now on Anahæmin (B.D.H.) 2 c.cm. at fortnightly intervals.

SECOND CASE

Male, aged 46; clerk. Married; two children well. First seen Dec. 16th, 1935. Eight months previously he had first noticed blurring of vision which gradually progressed despite glasses. He felt otherwise perfectly fit. His father and a paternal aunt had died of pernicious anæmia and one brother died of carcinoma ventriculi. The family history was otherwise negative, and he had enjoyed perfect health all his life.

He was well nourished with no pallor of the skin or mucous membranes, no œdema, no jaundice, no skin or thyroid change, no palpable glands, and no skeletal abnormality. His visual acuity was 6/60 in both eyes. The fundi showed marked pallor of the discs but no vascular disease nor hæmorrhages. The visual fields showed slight concentric contraction; intra-ocular tension was normal. The pupillary reaction to light was somewhat sluggish but normal to accommodation. The pupils were circular, central, and equal in size. Ocular movements were normal; there was no nystagmus and no evidence of cranial nerve dysfunction. Power, reflexes, sensation, coördination, &c., in limbs and trunk showed no evidence of organic nervous disease. The heart was normal in size, shape, sounds, position, and rhythm, blood pressure 140/80, pulse-rate 76, and there was no peripheral arterio-sclerosis. He had complete dentures, a clean but non-depapillated tongue; his sinuses and antra transilluminated normally, and there was no tonsillar or pharyngeal sepsis. Abdominal examination was negative. His lungs were clear. His urine was acid (spec. grav. 1010) and free from sugar, albumin, excess of urobilin, pus cells, and casts.

His blood Wassermann reaction was completely negative, and radiography of his skull, including pituitary fossa, sinuses, and antra, showed no evidence of disease. His cerebro-spinal fluid was not examined.

Although in this case there was no clinical evidence of either pernicious anæmia or subacute combined degeneration of the spinal cord, the memory of the first case was revived by the history of pernicious anæmia in his father's family and the absence of any ascertainable cause for his optic atrophy. A gastric analysis and blood count were therefore made. Complete achlorhydria was found and the blood showed:—

Red cells	4,700,000	Polymorphs	70%
White cells ..	7,400	Lymphocytes ..	25%
Hæmoglobin ..	94%	Monocytes	3%
Size of red cells ..	7·8μ	Eosinophils	1%
		Basophils	1%

Treatment was commenced on Jan. 4th, 1936, with campolon 5 c.cm. daily for seven days and then on alternate days for three weeks, after which two doses weekly were given. Gradually his vision improved and the most recent examination (June 2nd) shows his visual acuity in the right eye 6/12 and in the left eye 6/9. He is now able to carry on quite satisfactorily with his work.

DISCUSSION

I have previously emphasised that nervous symptoms in pernicious anæmia arise from: (1) the anæmia itself with resulting defective nutrition of nerve elements; (2) loss of function followed by degeneration of nerve elements, due either to a toxin present in pernicious anæmia or the absence of a specific substance essential to neural nutrition; and (3) areas of softening due to small hæmorrhages or thromboses.[1] The absence of regeneration in the central nervous system means that only those symptoms resulting from temporary loss of function and due especially to the first and second factors detailed above are potentially curable. The lesions caused by this second factor and their resulting symptoms might precede by a considerable period the clinical manifestations of pernicious anæmia and at first the effects would appear to be temporary and amenable to treatment. But if left untreated the pathological changes progress to irreparable and complete neuronic degeneration. In the cases recorded in this paper we are dealing with the influence of this second factor whose temporary and permanent effects gradually and imperceptibility merge, and treatment alone will reveal what degree of recovery is possible. Clinical examination cannot determine the proportion of temporary to permanent changes responsible for the visual loss in these cases, for the resulting symptoms and signs of both are identical. It is in this sense that the term "optic atrophy" is applied to the pathological change responsible for the visual disturbances described, and my cases demonstrate that this type of optic atrophy can precede other neurological and blood changes in pernicious anæmia. I exclude a fortuitous association of optic atrophy of undetermined origin with pernicious anæmia on what I think will be conceded are the amply adequate grounds of (1) the age of the patient at the onset of optic atrophy; (2) the steady deterioration in visual acuity before treatment was commenced; and (3) the considerable improvement which followed immediately the adequate parenteral administration of liver extract.

I would not without further observation venture to estimate how many cases of unexplained optic atrophy belong to this group. It is evident, however, that a few human beings can be spared the tragedy of progressive blindness if an unmasked pernicious anæmia be recognised early as the cause of failing vision and adequate treatment given.

The knowledge that failing vision due to optic atrophy might be the presenting symptom in pernicious anæmia will doubtless facilitate its recognition at an early stage. It is in the hope that the victims might be prevented from progressing to an advanced stage of blindness before the more obvious signs of its cause are evident that I have ventured to present these two cases.

[1] Cohen, H.: THE LANCET, 1935, i., 1291.

UVEO-PAROTITIS

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ROBERT RAINES, M.B. Leeds

AND

D. STENHOUSE STEWART, M.R.C.S. Eng., D.O.M.S.

HON. ASSISTANT OPHTHALMIC SURGEON TO THE HULL ROYAL INFIRMARY; HON. OPHTHALMIC SURGEON, VICTORIA HOSPITAL FOR SICK CHILDREN AND TO THE HULL AND SCULCOATES DISPENSARY

THE description in 1909, by Heerfordt [1] of Copenhagen, of "febris uveoparotidea" was the first account of a condition which has attracted increasing attention of late years. The affection remains rare enough to warrant the publication of an individual case, especially one presenting features which may throw additional light on the ætiology.

The fact that some of the patients have had no pyrexia [2-4] discredits Heerfordt's original name, and possibly the best concise definition is that of Garland and Thomson [5] who describe uveoparotitis as a "definite clinical entity characterised by bilateral uveitis and parotitis, pursuing a chronic course with a well-marked tendency to spontaneous recovery." Bilateral parotid swelling is by no means invariable, however, and in the case to be presented the ocular signs were unilateral.

Heerfordt suggested that the febris uveoparotidea was a complication of mumps, but there is no evidence to support his contention. The condition has been variously attributed to syphilis, beri-beri, oral sepsis, and diphtheria,[6] and Bang [7] even regarded so-called pseudo-leukæmia as a possible cause. It was recognised by Lehmann [8] that it might be ascribed to tuberculosis, and other continental supporters of this theory include Muller,[9] Schall,[10] and Berg.[30] Since the publication of Garland and Thomson's [5] classical paper it has been widely held that the disorder is always tuberculous. Consideration of previously reported cases suggests that the more carefully evidence of tuberculosis is sought, the more often is it found, and certainly the evidence seems almost complete in many cases. In such cases as those of Garland and Thomson [11] and Tanner and McCurry,[12] biopsies of parotid swellings and affected irides have shown a sclerosing endothelial proliferation "characteristic" of tuberculosis. Tubercle bacilli have, however, never been demonstrated in this condition, although it must be admitted that the search is a particularly fruitless one in many cases of the endothelial type of the disease.

Tait [4] has published the case of a patient in whom the polyneuritis sometimes associated with this condition was especially marked. He thought it unlikely that this affection of the peripheral nerves could be tuberculous, and quotes Critchley and Phillips [13] and Weve.[14] The former consider that the "weight of evidence pointed to some specific virus or agent as yet unknown," and Weve's view is similar.

In our opinion, however, the ætiological problem is not "is uveoparotitis due to tuberculosis or is it due to some unknown infective agent?" [6] A common practice, and one not solely confined to continental writers, is to ascribe a variety of conditions to a single cause. Koch's bacillus was once blamed for the reticulo-endothelial hypertrophy of Hodgkin's disease. We hold that a variety of causes may under certain conditions be operative. After study of the case to be presented it does, at least, seem wiser to withhold judgment and to refrain from labelling "uveoparotitis" as tuberculous without sufficiently exact proof in each case.

CASE RECORD

The patient was a railway clerk aged 50. His father died from pulmonary tuberculosis when the patient was 13 years of age. No proof of any other tuberculous disease in his family, nor any evidence of close or more recent contact with any sufferer from active tuberculosis was available. He never himself had asthma, nor any disease of supposed allergic type, and there is no suggestion of any hereditary tissue hypersensitivity. During childhood two attacks, apparently of pyelitis, were sustained, and he had scarlet fever at the age of 10. He never had mumps. In 1926 he was operated upon for hernia, and at this time a faint trace of albumin was detected in the urine. No albumin was found two months later, but his recovery from the operation was slow—and he began to experience slight general ill health.

In March, 1934, he had some pains in both legs which were attributed to a mild phlebitis. These subsided satisfactorily, but in July, 1934, he developed a carbuncle on the right upper lip and also a right-sided pleural pain. He was gravely and acutely ill, and a septicæmic condition was thought possible. Pus appeared in the urine and a right lower lobar pneumonia developed, but the carbuncle improved after massive doses of Collosol Manganese had been given intramuscularly. The urine cleared and the lip recovered completely, but improvement was very slow, and on August 23rd, 1934, he was admitted to hospital under the care of one of us (G. E. L.) with a diagnosis of unresolved pneumonia of the right lower lobe.

The radiogram taken at this time (Fig. 1) shows the inert diaphragm on the right side, as well as the shadow of a hilar gland and collapse of the right lower lobe. Paracentesis of the chest failed to reveal any fluid. The sputum was twice examined for tubercle bacilli but none were found. The Wassermann reaction of the blood was negative and the fundi were then normal. He was discharged after a fortnight in hospital, and at subsequent examinations he showed general improvement. Air entry into the collapsed right lower lobe continued to be deficient, although better than when first admitted to hospital.

In October, 1934, swelling of the legs was noticed. This resembled angioneurotic œdema, and persisted intermittently until March, 1935. All through the winter he complained of some dyspnœa on exertion. He remained in moderate health, however, until April 17th, 1935. On this date he had a temperature of 99° F. in the evening, and both parotid glands were noticed to be slightly swollen. Pain was absent, and all attempts to trace a contact with mumps failed. The swelling rapidly subsided, and on April 20th iritis developed in the right eye, to which it remained confined. The left eye was unaffected throughout.

This iritis was characterised by deposit of fine pigment upon the anterior capsule of the lens without the corneal precipitates reported by other observers. The vision of the right eye was reduced by vitreous haze to mere perception of light. The application of heat and atropine resulted in gradual resolution of the inflammatory process, and on June 15th the visual acuity had recovered to 6/60. On Sept. 10th, 1935, the patient's vision was as good in the right eye as in the left—but, to use his own words, he stated that objects seen with the right eye alone were "vignetted." Neither then nor previously had the intraocular tension been raised, and full recovery appeared to have occurred. Ophthalmoscopy, however, revealed cavernous atrophy of the right optic nerve head, limited to the temporal side and in its middle and lower thirds (Fig. 2). Perimetry showed some general constriction of the visual field of the right eye—more evident on the nasal side—and a contracted field of vision, almost hemianopic in character, for a red object (Fig. 3).

A full account of the ophthalmological aspects of this case has been presented by one of us (D. S. S.).[15] The

non-glaucomatous nature of the change pointed out by Maitland Ramsay [16] is confirmed.

The patient's recovery appeared complete, but in September, 1935, he had an urticarial rash, some further angioneurotic œdema, and a "fainting attack." Further investigations were carried out in December, 1935, when the cerebro-spinal fluid was reported upon by Dr. W. W. Adamson as entirely normal. The Wassermann reaction of the fluid was negative also.

In January, 1936, there was still a little diminution in air entry, and some persistent dullness over the base of the right lung. The condition did, however, represent a great improvement upon that of August, 1934, and a chest radiogram is reproduced for comparison (Fig. 4). The hilar gland shadows are still visible, but the report

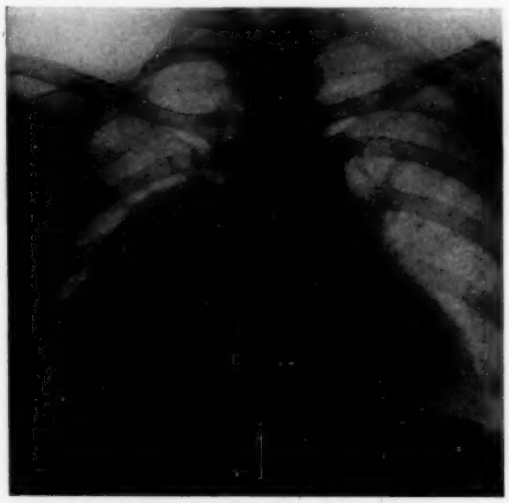

FIG. 1.—Collapsed right lower lobe. Unresolved pneumonia.

of the radiologist (Dr. J. E. Bannon) is to the effect that the chest may be regarded as normal. A Mantoux test was carried out on Jan. 24th, 1936. A strongly positive result was obtained as well with a 1 in 10,000 dilution of old tuberculin as with a 1 in 1000 dilution. At no time were there any abnormal neurological [31] or hæmatological [17 18 32] findings.

DISCUSSION

We are satisfied that this case, though it has unusual clinical features, is an example of uveoparotitis. The ophthalmic findings appear of particular interest, not only because of their essential nature—e.g., development of cavernous optic atrophy—but also because the changes were unilateral. In such patients as those of Kruskal and Levitt,[3] Feiling and Viner,[17] Macbride,[18] Cogan,[19] and in the earlier cases of Mackay,[20] McCulloch,[21] and Brewerton [22] (the first case described in England) the ocular lesions were bilateral. In our case no evidence of polyneuritis or even of any lesion confined to cranial nerves could be demonstrated (Feiling and Viner,[17] Macbride,[18] Tait [4]), and in this respect it resembled the patients of Dorrell,[2] Parker,[23] and others quoted either by Garland and Thomson [5] (47 cases), or by Merrill and Oaks [24] (30 cases).

Our patient's parotid swellings preceded his visual symptoms. In the patients of Parker,[23] Kruskal and Levitt,[3] Soutter,[25] and most other observers, the reverse order of incidence has held. It appears probable that some such cases, with parotid swelling as the first sign, must have led to the statement in a well-known text-book [26] that optic atrophy may occur as a complication of mumps. In no respect did the present patient resemble a case of Mikulicz syndrome.[27]

Leaving aside the older theories of the cause of uveoparotitis, already referred to, and also the possible association with canine distemper, hinted at by Parker [23] and Dorrell,[2] the present case appears at first sight to lend support to the modern concept of the disease as a tuberculous process. Yet we do not fully accept the tuberculous causation in this case, despite its apparent probability. Ranke [28] has shown that the tuberculous state can be divided into three stages, each characterised by its own type of tissue reaction. The primary stage of infection occurs, in the majority of the population, during childhood. It is symptomless and signless. In the secondary stage, however, a high degree of "allergy" develops. This stage may also be symptomless—and sometimes signless too, apart from positive tuberculin reactions. In the tertiary stage, tuberculin tests reveal a lessened degree of tissue hypersensitivity and an increase in immunity.

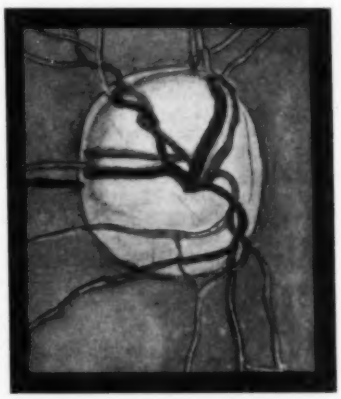

FIG. 2.—Ophthalmoscopic appearances.

The lesions of the secondary stage, when they appear, are usually exudative rather than proliferative, and amongst these "paratuberculous" phenomena phlyctenular conjunctivitis and erythema nodosum may be mentioned. The work of Collis,[29] with which one of us (G. E. L.) was associated, has shown that erythema nodosum is by no means always tuberculous, although the lesions are exudative. It may be stated that this condition is probably due to a local tissue hypersensitivity, but that the allergen which induces this cellular state is not always the same. According to Collis the bacterial allergens responsible for erythema nodosum in London are commonly either tuberculin or hæmolytic streptococcal endotoxin.

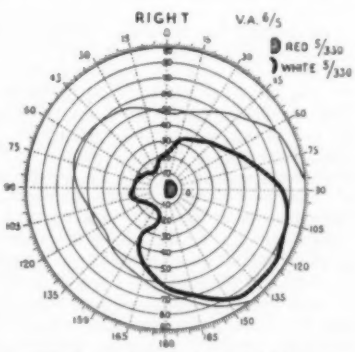

FIG. 3.—Perimetric chart of right eye.

x 2

Without wishing to be dogmatic, we think that a similar immunological basis underlies the pathology of uveoparotitis. The present case, it is true, shows a degree of tissue hypersensitivity to tuberculin, but this is by no means proof that the illness of our patient, associated with the unilateral uveitis and the bilateral parotid swellings, was necessarily due to a tuberculous infection. Tubercle bacilli were never demonstrated, and the clinical character of his last preceding illness (the pneumonia) was certainly not that of a tuberculous process.

It must be repeated that in the reported cases where biopsies have been performed (e.g., Tanner and McCurry,[12] Garland and Thomson [5 11]) a doubt arises. Guinea-pig inoculations have nearly always been negative, and the presence of a round-celled infiltration, even together with giant cells, is not always necessarily a proof of a tuberculous infection.

We prefer to regard uveoparotitis as an allergic manifestation, and in view of the great number of possible allergens—in addition to tuberculin itself—it appears to us both wiser and safer to suspend ætiological judgment. Each case of uveoparotitis deserves to be viewed on its merits, and we should not regard strongly positive tuberculin reactions as undoubted proof of a tuberculous causation of the condition. If other allergens could, by the same technique, be excluded, our conclusions would naturally be different. Similarly unequivocal demonstration of tubercle bacilli in the affected tissues could only point to the one cause.

It is possible that our patient's acute pulmonary illness may have had no relation at all to his uveoparotitis. It would seem, however, that if the latter were tuberculous, the previous lung infection would have had some clinical resemblance to a phthisical complaint, even apart from the absence of bacteriological proof. It is just such a case as that now reported which should lend the strongest support to the specifically tuberculous nature of uveoparotitis. We admit that some cases of this disease are almost certainly due to tuberculous infection, but we deny that every single case has, necessarily, such an origin.

In previously reported cases a period of malaise has been described before the onset of frank uveoparotitis. In our patient's case it is difficult to say at exactly what date the antecedent debility began. The severe general illness culminating in pneumonia may or may not have acted as the "sensitiser" of the uveal and parotid tissues. Any attempt at an explanation of the choice of the site or the limitation of the pathological tissue changes is beyond our present scope. It may well be that the position of the lesions is related to local differences in tissue hypersensitivity—a selective "allergy"—using the term in the original and broader sense of von Pirquet.

Although this patient had never previously suffered from any disease of an allergic sort, the attacks of angioneurotic œdema related afford another indication that the tissue immunity had been disturbed—whatever the exciting allergen involved.

The cases quoted and reported by Garland and Thomson strongly support their argument for a tuberculous ætiology—but only for those particular cases. Even if miliary tuberculosis supervened it might be argued that the uveoparotitis itself was not necessarily tuberculosis. Another allergen could have so altered the local tissue immunity that the natural defences against a tuberculous infection, possibly exogenous, but certainly from a source different from the uveal tract or parotid gland, were rendered ineffective. In other words, the allergen active in causing uveoparotitis might merely prepare the way for tuberculosis. The tuberculous infection which follows would then be merely a concurrent pathological process and not the specific cause of the uveoparotitis.

SUMMARY

(1) A case of uveoparotitis is described and the possible origins of the disorder are discussed. (2) We suggest that uveoparotitis may not be due to any one specific infection, but is rather a manifestation of local tissue hypersensitivity—possibly due to any one of a variety of allergens or sensitising agents.

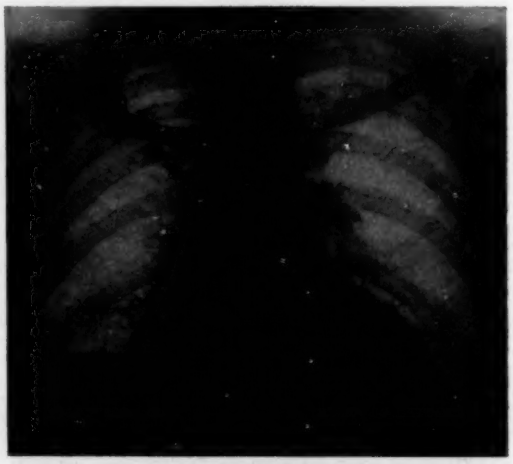

FIG. 4.—Enlarged root glands.

(3) Whilst tuberculin may often be the allergen responsible, it seems unwise to regard all cases of uveoparotitis as tuberculous.

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SIMULTANEOUS BILATERAL ARTIFICIAL PNEUMOTHORAX

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FEW of those who are concerned with the problems of pulmonary tuberculosis will deny that artificial pneumothorax therapy is the greatest advance in treatment during the last twenty years. Although it is a notable advance, it is unfortunately only applicable in a relatively small proportion of all cases of phthisis, thus limiting its undoubted value.

Pneumothorax treatment has enabled many who were destined to a speedy decease, or at the best to a life of chronic invalidism with its attendant misery both for the patient himself and his relatives, to be restored to a working capacity and, consequently, economic independence. Simultaneous bilateral collapse, by extending still further the scope of pneumothorax treatment, presents another important advance, which we in this country have perhaps not appreciated as fully as some workers on the continent and in America, and it demands far deeper consideration from ourselves than it has received up to the present.

The unilateral pneumothorax in spite of its undoubted value has its disappointments and its limitations. A fresh focus of disease may appear in the hitherto clear contralateral lung or a formerly quiescent focus therein may show signs of active spread. In other cases active bilateral disease makes unilateral collapse a valueless procedure. For these, simultaneous bilateral collapse, when practicable, is the only possible solution. We have therefore collected and studied a consecutive series of such cases, 44 in number, which have passed through the sanatorium as in-patients during the last seven years.

INDICATIONS

Careful examination of the histories of these 44 patients show that the cases chosen for the induction of bilateral pneumothorax divide themselves into two main groups.

Group A.—Cases in which a simultaneous bilateral pneumothorax was a primary consideration. In this group there was a very short interval between the induction of the two pneumothoraces, usually 2–4 weeks. We find here that the lesions fell into three distinct types: (1) an active or spreading lesion in both lungs; (2) a spreading lesion in one lung with a non-spreading but symptom-producing lesion in the other; and (3) non-spreading but symptom-producing lesions in both lungs.

Group B.—Cases in which an artificial pneumothorax has been established on one side and the patient has remained stable for some time; relapse has then taken place, either by the appearance, clinically or radiologically, of disease in the previously healthy contralateral lung, or by the activity or spread of a focus in the contralateral lung which had up till then remained quiescent. The time interval between the inductions in this group will obviously vary from months to years, being dependent upon the date of the appearance of that spectre, relapse.

TECHNIQUE

The induction of a simultaneous bilateral pneumothorax must of necessity vary slightly in accordance with the grouping of the case. In Group A, where there is active or gross bilateral disease, the more heavily infiltrated lung is collapsed first. The actual method employed is that of the ordinary unilateral artificial pneumothorax, save that the volume of air introduced is smaller, usually 150 200 c.cm. A similar amount is introduced on the second, the fourth, and the seventh days. Before his refill on the eleventh day the patient is examined under the fluorescent screen, and henceforth the intervals between refills and the volume of air introduced are regulated according to the degree and type of collapse observed on the screen. Every effort is made by these means to obtain a selective collapse of the diseased area. When a satisfactory degree and type of collapse have been attained, this usually taking 2–6 weeks, the physician can now turn his attention to the other lung, which is collapsed and controlled on the same general principles.

The ideal radiological result is a selective collapse of the diseased portions of both lungs with the healthy portions inflating freely. There should, as a rule, be no mediastinal herniation or displacement, and the heart should be in its normal position. This happy state cannot always be attained, since the distribution of the disease and the size of the areas involved may preclude it, but with a little care it is surprising how often a result approaching the ideal can be produced.

It is not always expedient to have the degree of collapse the same on the two sides, even when the lesions in the two lungs appear comparable in type and extent. The general comfort of the patient and his symptoms may be profoundly influenced by readjustments in the depth of collapse on one or other of the two sides. Skilful attention to this "balancing" of the collapses, at times a rather tedious procedure, is well repaid by a greatly improved general response. But it may be accepted as an axiom that the lung with the more long-standing and denser disease, especially if cavitated, requires a more complete collapse than the less affected lung.

It is indeed remarkable the extent to which the lungs may be compressed without the patient showing any signs of respiratory distress, so long as one lower lobe is permitted to inflate freely.

The most favourable results are undoubtedly obtained in those cases in which the lesions are confined to the upper lobes; in these a bilateral selective apical collapse can frequently be produced, thus controlling the diseased areas, whilst at the same time the healthy lower lobes are allowed to inflate freely, ensuring a sufficient vital capacity for easy, effortless respiration even with moderately severe physical exercise.

In Group B, where one lung has been collapsed for some time before a spreading lesion appears in the contralateral lung, a simultaneous bilateral pneumothorax need not always be considered immediately, but more conservative methods may be tried out at first—prolonged rest in bed, chrysotherapy, and so forth—and when such measures fail bilateral pneumothorax should be considered. During the period of conservative treatment the progress or retrogression of the new lesion is carefully observed by means of comparable serial X ray films taken at frequent intervals. Frequently the lesion becomes static or retrogressive, when no further interference is necessary. Some lesions, on the other hand, show signs of instability when exercise is increased, or continue to spread or cause symptoms in spite of routine treatment. In these cases, the original pneumothorax should be allowed to inflate slowly until the lung is ventilating freely, attempts

CASES TREAT D WITH SIMULTANEOUS BILATERAL ARTIFICIAL PNEUMOTHORAX

CASES ALIVE—GROUP A

Case.	Age.	Years since induction of bilateral A.P.	Years maintained as bilateral A.P.	Years since one or both sides abandoned.	Reasons for abandonment.	Immediate response.	Response after 1 year or longer.	Complications.	Remarks.
		yr. mth.	yr. mth.	yr. mth.					
1	31	7 9	2 6	5 3	Physician's choice.	Good.	Fair.	—	Late cavitation in R. lung 4 years after R.A.P. was abandoned.
2	23	5 11	0 9	5 2	Obliteration.	"	"	—	Late cavitation in R. lung after obliteration.
3	23	1 6	1 6	—	Still maintained.	Fair.	"	Small amount of fluid; refill reactions.	—
4	20	6 5	2 9	3 8	Obliteration.	Good.	Good.	—	—
5	22	4 4	0 3	4 1	Spontaneous pneumothorax in R.	"	Fair.	Spontaneous pneumothorax.	Late cavitation in R. lung after R.A.P. was abandoned.
6	17	1 10	1 10	—	Still maintained.	"	Good.	—	—
7	29	6 6	2 6	4 0	Fluid in R.	"	"	Fluid.	—
8	23	3 0	0 6	2 6	Adhesions; diseased parts of lungs could not be collapsed.	Bad.	—	—	Good response to bilateral apicolysis later.
9	20	4 5	2 4	2 1	Obliteration.	Good.	Good.	—	—
10	19	4 5	1 3	3 2	"	"	"	—	—
11	23	5 3	2 2	3 1	Fluid.	"	"	Fluid.	—
12	22	5 7	1 0	4 7	Obliteration.	"	"	—	—
13	33	0 10	0 10	—	Still maintained.	Fair.	—	Fluid.	—

CASES ALIVE—GROUP B

1	24	6 10	1 6	5 4	Spontaneous pneumothorax.	Good.	Fair.	L. spontaneous pneumothorax.	—
2	18	5 10	3 2	2 8	Physician's choice.	"	Good.	—	—
3	19	2 2	0 6	1 8	Fluid. Dyspnœa.	Bad.	Bad.	Fluid.	Spread of disease and cavitation in L. lung after L.A.P. abandoned.
4	28	6 6	6 6	—	Still maintained.	Good.	Good.	—	—
5	18	1 3	1 3	—	"	"	"	—	—
6	18	1 6	1 6	—	"	"	"	—	—
7	30	1 5	1 5	—	"	Fair.	Fair.	—	—
8	—	4 3	3 5	0 10	Fluid.	Good.	Good.	Fluid.	—
9	26	1 8	1 8	—	Still maintained.	"	"	Small amount of fluid; refill reactions.	—
10	22	1 3	1 3	—	"	"	"	—	—
11	18	5 3	2 3	3 0	Obliteration.	"	Fair.	—	Late cavitation occurred in L. lung after L.A.P. was abandoned.
12	23	5 7	1 1	4 6	Refill reactions.	"	Bad.	Refill reactions.	Spread of disease in R. lung after R.A.P. was abandoned; R. phrenicectomy performed later.
13	20	0 10	0 10	—	Still maintained.	"	—	—	—
14	27	1 0	1 0	—	"	Fair.	Fair.	Small amount of fluid; refill reactions.	—
15	—	1 8	1 8	—	"	Good.	Good.	—	—
16	18	1 8	1 8	—	"	"	"	—	—
17	17	0 9	0 9	—	"	"	—	—	—
18	30	0 8	0 8	—	"	"	—	Spontaneous pneumothorax.	—
19	23	0 8	0 8	—	"	Fair.	—	—	—

being made to render it selective by carefully controlled refills and spacing; the second pneumothorax is then induced and established along the lines already suggested.

In some instances circumstances may combine to render this preliminary period of conservative treatment before the induction of the second pneumothorax either impossible or inadvisable. The temperament and morale of the patient must be considered, and these alone may preclude the recommendation of the fuller but more leisurely course, especially if a previously prolonged course of hospital or sanatorium treatment has entailed a severe drain on his mental and financial resources. Again, economic conditions and the exigencies of modern industrialism may demand his return to work at the earliest possible moment. It would then indeed be bad treatment to detain him and stabilise his tuberculosis at the cost of the loss of that very best of aids to successful after-care, congenial and financially stable employment, which might be ensured by an abbreviated treatment. Such a course, in these circumstances, is much more likely to be rewarded with real success than the full régime followed by domestic and financial insecurity.

The stabilisation and maintenance of a simultaneous bilateral pneumothorax calls for the greatest care. It is advisable that the collapse should be controlled by the same physician for as long as possible, and it is very important that the person who performs the refills should always be present at the screening. The degree of collapse is controlled by frequent observation on the screen—at least once weekly—and by the general clinical condition and symptoms, both subjective and objective, of the patient. In our experience it is advisable whenever possible to refill both sides at the same session. This is preferable because, first, there seems to be less likelihood of the occurrence of refill reactions; secondly, patients aver that there is less discomfort after the refills; and, thirdly, much time and inconvenience is saved when he has left the institution and returned to work.

Difficulties are often experienced in the early stages in maintaining a satisfactory degree of collapse on the two sides. Despite frequent observation on the screen and careful filling, the depth of the collapse

CASES TREATED WITH SIMULTANEOUS BILATERAL ARTIFICIAL PNEUMOTHORAX—(*continued*)

CASES DEAD—GROUP A

Case.	Age.	Years from induction of bilateral A.P. till death.	Years bilateral A.P. maintained.	Years from abandonment of one or both sides till death.	Reasons for abandonment.	Immediate result.	Complications.	Later.
		yr. mth.	yr. mth.	yr. mth.				
1	18	1 8	0 6	1 2	Obliteration.	Fair.	Hæmoptysis.	Fluid in L. after R. had obliterated.
2	19	1 7	0 4	1 3	Unsatisfactory collapse.	Good.	—	Cavitation occurred in L. lung after L.A.P. was abandoned.
3	20	1 11	0 7	1 4	Fluid.	"	Fluid	Spread of disease.
4	16	5 0	4 0	1 0	Physician's choice.	"	—	Died as a result of an accident; well and working shortly before.
5	18	2 5	0 7	1 10	Acute fluid onset.	Fair.	Fluid.	Spread of disease.
6	27	2 6	?	?	?	Good.	—	—
7	27	2 6	0 6	2 0	Obliteration.	"	—	Fluid in L. after R. had obliterated. R. phrenicectomy later.
8	16	2 7	0 7	2 0	Patient too ill.	Bad.	—	—

CASES DEAD—GROUP B

1	18	1 0	0 9	0 3	Dyspnœa, loss of weight, pleuritis.	Bad.	Pleuritis.	Spread of disease.
2	23	0 11	0 5	0 6	Fluid, hæmoptysis, dyspnœa.	,,	Fluid in R., hæmoptysis from R. lung, dyspnœa + +.	Rapid spread of disease.
3	28	4 0	2 6	1 6	Obliteration.	Good.	—	Pregnancy, labour, spread of disease.
4	15	2 0	1 0	1 0	Physician's choice.	,,	—	Cavitation in R. lung. R.A.P. re-established after expansion but without collapse of patent cavity. Died from hæmoptysis.

on either side may vary considerably from week to week, but by slight adjustments of volumes, according to screen appearance, a stable condition will be reached when both sides can be refilled at constant intervals with constant amounts with only a minimal variation in the collapse. Bilateral pneumothoraces should, as a general rule, be refilled on a volume basis, and very little attention should be paid to small variations in the final pressures. Quantity, not pressure, should be the keyword.

COMPLICATIONS

The complications that occur in a bilateral artificial pneumothorax are of necessity similar to those in the unilateral type. Bearing in mind the greatly diminished vital capacity, any complication that tends to reduce this still further must be regarded as of comparatively grave import.

Effusion.—In almost every case of bilateral pneumothorax a small collection of fluid—the so-called "puddle"—is seen at some period of the collapse. These "puddles" are almost always unaccompanied by any symptoms and are without significance. In a few cases (11 in our series of 44) larger collections appeared with or without accompanying constitutional disturbance, in the same manner as in a unilateral collapse. In other cases, there is, again as in the unilateral type, a sharp sudden onset with rise of temperature, pain, and dyspnœa. This dyspnœa may be mainly reflex and controllable by the exhibition of sedatives. Only on rare occasions does cyanosis and dyspnœa call for decompression and removal of air during the actual onset.

During the formation of the effusion close observation must be kept on the screen appearance of the collapse and the clinical condition of the patient. If there are no signs of distress the further procedure depends on the volume of the effusion. Even when one pneumothorax cavity is half filled with fluid the bilateral collapse can usually be maintained. Should the cavity proceed to fill still further, the question of gas-replacement, repeated if necessary, may arise; or the pneumothorax on this side may be abandoned, leaving the fluid to maintain the collapse until absorption takes place, the contralateral collapse being continued. If, on the other hand, signs of acute distress appear, active interference becomes essential. The precise method to be adopted to relieve the patient must be decided according to the merits of the case—simple aspiration, gas-replacement of the fluid, and decompression of the opposite side all have their uses. Fortunately, resort to such interference, which will probably eventually lead to the abandonment of one or other of the pneumothoraces, is not often indicated. It is remarkable what little discomfort a large effusion on one side may cause.

Refill reactions.—Another frequent but usually minor complication is the occurrence of refill reactions. Only rarely are these serious enough to assume any real importance. When they are severe the pyrexia, which may persist for several days, and the general malaise necessitate an irritating rest after each refill, thus sometimes compelling abandonment of one or both sides on economic or psychological grounds. These reactions may appear at any time during the maintenance of the pneumothorax, but fortunately are usually of an evanescent nature. A variety of methods have been advocated from time to time with a view to minimising or preventing them, with varying degrees of success—e.g., refilling both sides at the same session; refilling at a different site each time; or slow refills with a very fine needle.

Spontaneous pneumothorax.—A rather more frightening complication is the occurrence of a spontaneous pneumothorax (3 in our series), but even this accident is not so grave as one might anticipate. The immediate treatment depends on the presence or absence of cyanosis. Should this be absent, active treatment will probably be unnecessary. The dyspnœa which is mainly reflex can usually be relieved by giving morphia and by reassuring the patient. In the presence of cyanosis, decompression—repeated if necessary—will usually suffice. Much more dangerous is the possible subsequent development of a pyo-pneumothorax.

RESULTS

In assessing the value of this form of treatment we would point out that the available material on which this investigation is based is too small and covers too short a period to allow of definite statistical evidence of the remote results. Although several of the Group A cases had their treatment commenced several years ago—the longest seven years—it is only within the last three years that this method of treatment has been used on an increasingly large scale, especially in the Group B cases. For this reason we have thought it advisable to concentrate chiefly upon the immediate response—namely, that at the termination of the full sanatorium course—bearing in mind the gravity of the condition of the majority of the patients on whom the operation was performed.

In Group A we find that 20 cases have been discharged from the sanatorium: of these 17 were sufficiently fit and stable to carry out routine Grade 3 or 4,[1] which entails fairly heavy manual work. One case reached Grade 1—i.e., light manual work—but the other 2 cases did not respond sufficiently to warrant continuation of this treatment. At the same time, only 50 per cent. of the total Group A cases reported any symptoms whatever on discharge, these consisting only of slight cough with a trace of sputum or a very mild dyspnœa.

In Group B, 22 cases have been discharged: 16 reached Grade 3 or 4; 3 reached Grade 1 or 2; 3 cases were unsatisfactory. In this group 70 per cent. were symptomless on discharge.

One of the most striking features of these cases was the almost complete absence of dyspnœa in the majority when stabilised, and even in those cases in which it was reported present it was was nearly always so slight as to cause practically no inconvenience. It is an amazing sight to see men with a simultaneous bilateral pneumothorax working on our pig-farm and swinging heavy buckets of swill about with surprising nonchalance and a general air of well-being. Several of our ex-patients are on full nursing duty—no light task.

Every year that passes in the life of the consumptive tends to introduce more and more extraneous factors which may interfere with the favourable course of his disease. Economic circumstances, changes of environment, changes of domicile, perhaps necessitating less careful supervision, all these must influence the eventual result. Again, opinions vary as to the length of time an artificial pneumothorax should be maintained; some will abandon it in two or three years on a "time" basis, others advocate maintenance indefinitely as we do, in the absence of complications, in an effort to avoid "late cavitation" in the re-expanded lung. Pathological changes may terminate the collapse—the physician being "always at the mercy of the behaviour of the pleura"—obliteration or large effusions deciding the issue. By reason of all these variables and the shortness of our series we decided that it would be of little value to analyse the remote results too closely, but the following facts may be of interest.

In Group A, 13 patients are still alive and 8 have died. Of those alive, 6 have survived the induction of the second pneumothorax by more than five years, and of the remainder 6 have survived for two years or longer. One patient is of less than two years' standing. Of those who have died, 3 failed to survive for two years after the induction of the second pneumothorax, and 1 patient was killed in an accident after having kept well for over five years.

In Group B, 19 patients are still alive and 4 have died. Of those alive, 5 have survived the induction of the second pneumothorax by more than five years. Of the remainder, 2 have survived for two years or longer and 12 are of less than two years' standing. In this group 3 patients failed to survive for two years after the induction of the second pneumothorax.

[1] Wingfield, R. C.: Text-book of Pulmonary Tuberculosis, London, 1929, p. 215.

DISCUSSION

In appraising the value of this form of treatment it must be appreciated that in our Group A cases it was used as the only available measure of treatment, the extent and type of disease being such that the expectation of life was short. A two-year survival can therefore be regarded as an excellent result.

In Group B the same would apply to many of the cases; yet in others the prognosis before the induction of the second pneumothorax was much more favourable. Indeed, in some of these patients the spread of disease was detected and the treatment instituted on radiological evidence alone, before the appearance of symptoms or physical signs. Therefore in this group it is more difficult to assess the particular value of the treatment, although the results are certainly much better than would have been the case if the original artificial pneumothorax had been abandoned in order to allow collapse of the contralateral side.

Simultaneous collapse therapy is a powerful weapon in the hands of the physician who can master its technique and appreciate its problems. Though an easy and practical method of treatment it calls for the exercise of great patience and no little trouble on the part of the physician, and for the fullest coöperation from the patient. In view of the excellent results obtainable, this operation calls insistently for further consideration and wider adoption in this country. Many more lives might be saved and many financial and economic problems solved by its judicious use in selected cases of phthisis.

We wish to tender our acknowledgment and thanks to Dr. R. C. Wingfield, medical superintendent of the sanatorium, for his helpful criticisms; to the physicians of the Brompton Hospital for permission to utilise their records of the cases before admission and following discharge from the sanatorium; and to the staff of the statistical department at Brompton Hospital for their invaluable assistance in tracing patients who are no longer under treatment at the hospital.

ACUTE PHLEGMONOUS APPENDICITIS PRODUCED BY INTRAVENOUS ADMINISTRATION OF HISTAMINE

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Previous experiments have shown [1-3] that diverse nocuous agents, such as surgical or nervous shock, intoxication with various drugs, excessive muscular exercise, and exposure to cold, elicit a syndrome characterised mainly by œdema formation, adrenal hyperplasia, thymus atrophy, and gastro-intestinal ulcers. These symptoms are more or less independent of the nature of the damaging stimulus, and probably represent a response of the organism to damage as such. The syndrome has been considered to be the expression of a general alarm of the organism when suddenly confronted with a critical situation, and since the purpose and more intimate mechanism of the reaction is still unknown, it has simply been referred to as "the alarm reaction." For reasons discussed elsewhere [2 3] I believe that most of the

symptoms of the alarm reaction are caused by histamine or some other pharmacologically related metabolites produced by the tissues under the stimulus of damaging agents such as those mentioned above.

In these earlier experiments I had already noticed that in the alarm reaction the mucosa of the appendix is frequently the seat of deep ulcers. I wish to recall here that the appendix in the rat is not as sharply demarcated as it is in the human, but as Berry [4] has shown, the distal part of the cæcum, which is surrounded by a slight constriction, corresponds to the appendix. These lesions in the appendix did not seem very remarkable, however, since the entire gastro-intestinal tract was usually covered with innumerable ulcers. Ulcerations in the stomach, the small and large intestine, and the appendix, similar to those seen in the alarm reaction, have also been produced by repeated subcutaneous injections of histamine given over a period of 48 hours, which seemed in good accord with the interpretation of the alarm reaction as the result of an endogenous intoxication with some histamine-like substance.

More recent experiments, however, disclose the rather unexpected fact that a very acute alarm reaction, such as may be produced for instance by the intraperitoneal administration of formaldehyde, lesions the appendix selectively so that an acute phlegmonous, frequently perforating, appendicitis develops without any visible changes in the other viscera. In my first experiment, twelve adult male rats received 0·5 c.cm. of a 4 per cent. formaldehyde solution intraperitoneally. At autopsy 48 hours later, all of these animals showed severe, purulent, phlegmonous inflammations of the appendix which led to perforations (demarcated by adhesions) in three cases. It seems most unlikely that these selective appendicular lesions could have been caused by the injection of the formaldehyde on to the surface of the appendix, for it is most improbable that the drug would have been injected just there by mere coincidence in all twelve cases. Furthermore, an examination of the less severe cases showed that the lesions begin to form from the inside of the appendix, and marked necrosis of the mucosa is seen at a time when the muscularis and serosa are still intact.

If my interpretation of the alarm reaction as an endogenous intoxication with histamine-like metabolites be correct, then these appendicular lesions would be the result of a sudden release of large quantities of histamine by the tissues. In this case it should be possible to reproduce the same lesions by intravenous injections of histamine. This proved to be the case. Twelve adult male rats were injected with 3 c.cm. of a 1 per cent. solution of histamine-dihydrochloride into the jugular vein under light ether anæsthesia. As soon as seven hours after this injection, 11 of the 12 animals had an acute phlegmonous appendicitis without showing any changes in the other viscera, except a very small erosion of the gastric mucosa in one case (see Figs. 1–4). It should be mentioned that these experiments have been performed on the so-called "hooded" black and white rat, for I convinced myself that the results are much less constant, and usually larger doses are required, when a pure white strain of rats is used.

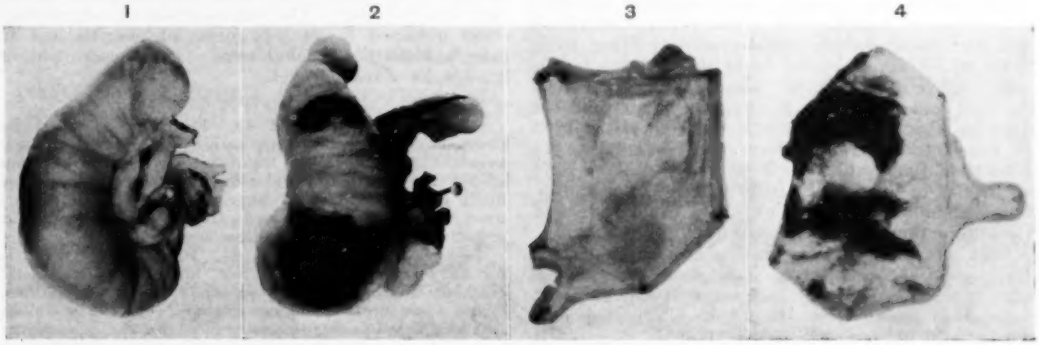

FIG. 1.—Appendix of a normal rat.
FIG. 2.—Appendix of a rat seven hours after the intravenous injection of 30 mg. of histamine.
FIG. 3.—Inner aspect of the appendix shown in Fig. 1.
FIG. 4.—Inner aspect of the appendix shown in Fig. 2.

It is evident that a secondary infection by bacteria such as are present in the appendix plays an important part in the development of the disease, but this I now believe is a secondary phenomenon. The experiments show that localised lesions may be produced by certain acute types of the alarm reaction, and that the intravenous administration of histamine may selectively affect the appendix without causing any other appreciable morphological changes.

Since my previously reported experiments showed[1-3] that pleural transudates, acute hæmorrhagic lung œdema (not unlike that seen in the stage of red hepatisation of the lungs in pneumonia), intense diarrhœa, &c., may also be seen in certain types of the alarm reaction, it does not seem unlikely that many of the diseases in the ætiology of which exposure to cold has been thought to play a certain part, the so-called *morbus a frigore* of the ancient physicians, are in reality elicited by an alarm reaction which may be caused either by cold or by any other serious general damage inflicted upon the organism. The lesions caused by the alarm reaction would then secondarily open the way to pathogenic micro-organisms present in the damaged organ.

SUMMARY

Experiments on the rat show that intraperitoneal injections of formaldehyde or intravenous injection of histamine affect the appendix selectively and cause a phlegmonous, often perforating, appendicitis. This reaction is considered to be a special type of the alarm reaction.

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BEE VENOM IN RHEUMATIC DISORDERS

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Since the earliest days of medicine there has been a popular belief that those who are habitually exposed to the stings of bees escape rheumatism. In country districts to this day it is no uncommon thing for sufferers to allow themselves to be stung. Accordingly attempts have lately been made to produce a stable bee-venom preparation which could be used clinically. This has been given either by transcutaneous injection or by inunction. On the clinical results much has already been written, and like other workers I have tried, I believe, all the British and continental brands on the market. When using those which were directed to be injected the results were uneven and often disappointing. A local reaction was obtained in most cases, but beyond the obvious effects of counter-irritation there was little to demonstrate. With the use of preparations for inunction the results were similarly uneven and attacks of malaise occasionally followed the application. Again counter-irritation alone could have had the same action without the systemic disturbances.

Such was the position when I was asked by Messrs. Hoffmann-La Roche to give an extended clinical trial to a bee venom they had prepared and proposed to market under the name Apicur. Having now treated over 100 cases of neuritis, fibrositis, rheumatoid arthritis, and osteo-arthritis, I regard the results as encouraging enough to deserve report.

The Apicur is supplied in rubber-capped ampoules containing 1 c.cm. of a sterile and stable 1·5/1000 solution of bee venom. A vaccine syringe is used, fitted with a Parke Davis needle No. 55, this being a needle specially made for intracutaneous injection and superior to any others so far found for the purpose. For the first injection 0·1 c.cm. is used, and the dose is increased with each sitting to a maximum of 0·4 c.cm. It is now my custom to distribute the quantity to be given over as many individual punctures as possible, and it will be found easy with 0·4 c.cm. to make at least 55 or 60 punctures. When formerly the punctures were fewer and the injections larger there was a tendency for the local reaction to become unpleasantly severe, with, in a limb, much distal swelling and discoloration. These undesirable effects are never seen when the method of multiple punctures is used. The injections are given intracutaneously over the site of the disability in fibrositic and joint conditions, and along the entire course of the affected nerve and its distributions in cases of neuritis. It has been found useful in brachial neuritis to include the lower five or six cervical vertebral areas and the upper three thoracic.

At the site of the injection a small area of pressure-anæmia is at once noticed, followed rapidly by a spreading weal surrounded by an area of hyperæmia. When multiple punctures are made the weal formation naturally is less than where a larger quantity has been given. In some cases there will be a small amount of bleeding and in all there is an exudation of serous fluid. The patient immediately experiences a burning at the site, followed by itching and slight throbbing. The itching continues intermittently for two or three days, passing off as the area returns to normal. Injections are given every fourth day and do not interfere with other treatment which may be given, it being possible even to massage the site without ill effect. In a few cases it has been noted that the weals, instead of remaining discrete, throw out "pseudopodia" in all directions, and uniting with their neighbours form a network. It has not been necessary to provide a soothing dressing of any kind as the itching is well tolerated. It is found in giving the injections that there are big differences of sensitivity in different areas, the most tender being over the neck and lumbar spines.

The patient's attention, I notice, is at once transferred from his disability to the injections, and as his sensations settle down to a comfortable feeling of heat he usually states that the original pain has gone or has decreased. This declaration is made as a rule after about half an hour. The injections have been given before, during, and after the administration of infra-red rays but no modification of result has been noted. It is seldom necessary to repeat the injections more than four or five times. No general reactions have so far been found, with one exception, which will be noted later. The best results have undoubtedly been obtained in various forms of neuritis and in painful fibrositis, although some of the cases from other groups have reacted well.

ILLUSTRATIVE CASES

Case 1.—Female, aged 48. Fibrositis. Treated on previous visit with baths, ionisation, and massage. Much benefit. Again similar treatment with the addition of apicur to the painful shoulder muscles. Four sittings given; great additional improvement. The injections were well tolerated although the patient, who has a spina bifida and hyperthyroidism, is very "nervy."

Case 2.—Female, aged 64. Rheumatoid arthritis for 14 years. Now mainly feet, ankles, and shoulders. Had spa treatment on five occasions without accessories. Given a series of five apicur sittings, with much benefit to the affected parts, especially increased shoulder movement. Much better than after former visits.

Case 3.—Male, aged 75. Brachial neuritis off and on for the last 20 years. More severe in last two months. Given baths, infra-red and apicur. Immediate improvement with loss of symptoms, more rapidly than would have been expected from the other treatment alone. The patient was not at all robust, but tolerated the full doses of venom without showing the least sign of shock or distress.

Case 4.—Female, aged 25. Sciatic neuritis. Was treated a year previously with histamine ionisation alone and got much relief. Returned and was given an injection of apicur the first day and a histamine ionisation the next day, and on the third appearance was asked which had given the greater amount of relief. Declared for the venom, which was forthwith continued with good results.

Case 5.—Female, aged 56. Villous arthritis of knee. Had previously much treatment, electrical and physical, but with little result. Given venom on several widely separated occasions and can now walk farther and better than for many years and has comparatively little pain. All other treatment had been stopped for several months before commencing the venom.

Case 6.—Male, aged 73. Osteo-arthritis, mainly of hip and knee. Was given four punctures over hip and on the fourth day a similar number round the knee. The hip had reacted normally but round the knee there was much local reaction and pain, with headache. A third injection to the hip produced no disturbance but another to the knee produced an even greater reaction and further venom was declined, although there was undoubtedly more freedom in moving the limb. This is the only case so far which has shown any ill effects, and it must be noted that there was a history of apoplexy and more recently a troublesome disorientation, so the case cannot be regarded as normal.

Several cases of early rheumatoid arthritis and the more acute types have been treated, but as other more usual forms of treatment were mainly relied upon it cannot fairly be claimed that the improvement was due to the venom or otherwise. Further work is being undertaken in these cases.

COMMENT ON RESULTS

As it is little more than a year since I first used apicur it is impossible to gauge the permanency of

the results; but it so happens that several of the first patients to receive it have remained during the whole of the intervening time under observation, and from these it is possible to get some idea of what may be expected. In one case, with severe brachial neuritis, pain was mitigated almost at once, and at the end of three sittings it was gone. The original exciting cause remained, and the pain showed signs of returning after about five weeks; but it responded again to one sitting and has continued similarly to return and be relieved. In two other cases, however, one of sciatic neuritis and one of lumbar fibrositis, there has so far been no return of the trouble. These three cases were treated with apicur alone and all had previously received appropriate treatment without more than temporary gain. One other patient was being given a course of another brand of bee venom when a supply of apicur came to hand. When the next injection was due apicur was used without informing the patient of the change, and she immediately exclaimed on the strength she was getting, saying that there was much more stinging. Similarly there was a vastly different report when next she was seen, telling for the first time of a very definite improvement.

Whether the results obtained with apicur are lasting or otherwise, it would have a very real value if it afforded merely a relief which in my experience can be obtained neither by the older methods nor with other bee-venom preparations I have tried. The method presents no technical difficulties and seems to have no contra-indications.

CLINICAL AND LABORATORY NOTES

A CASE OF CHOREA GRAVIS TREATED WITH AVERTIN

By Leslie Cole, M.D. Camb., F.R.C.P. Lond.
HON. PHYSICIAN TO ADDENBROOKE'S HOSPITAL, CAMBRIDGE

There are few records of the use of Avertin in the treatment of chorea. This is partly because cases severe enough to justify this treatment are rare and partly that the potentialities of avertin are not yet generally recognised.

Gallinek [1] refers to two very severe cases in children in which one basal anæsthetic dose of avertin was given daily for four consecutive days. The movements were controlled and rest was obtained for several hours after each injection, a result which other sedatives had failed to achieve. Westphal [2] describes a very severe case in a man aged 20 who could not sleep because of the severity of the movements and could not be fed because of the involvement of the mouth and throat. He was given 150 g. of a 3 per cent. solution of avertin daily for five consecutive days with a similar good result. Paraldehyde, luminal, and ephedrine were also given over the same period. In the case here described, much larger amounts of avertin over a much longer period had to be given before the condition subsided.

The patient was a girl, aged 11, with nothing relevant in her family history. She had had measles and whooping-cough as a small child, but had no history of rheumatic fever, growing pains, or tonsillitis.

Present illness.—She had been in perfect health until July 12th, 1936, when she went to the seaside for a day and there developed aching pains in the back and legs which lasted four days. After this she did not seem in her usual health, but grew pale and fidgety and began to lose weight. The nervous movements grew gradually worse but she had no more pains. On August 7th the movements became very much worse, and on the day before admission had become so severe that she could not swallow solids and could hardly sleep, speak, or drink. They involved the whole body and were continuous.

State on admission (August 12th).—A thin pale child in a state of continuous choreiform convulsions which involved the whole body. The movements were typical of chorea but of great violence, and no part of the body was still for a moment. The muscles of the face, throat, and mouth were all affected, so that speaking, eating, and drinking were almost impossible. They did not cease for an instant either by day or night, so that sleep was impossible.

On examination there was no sign of infection in the mouth or throat or elsewhere. Temp. 99·4° F., pulse-rate 124, respirations 24–60. The heart appeared to be enlarged half an inch to the left, but showed no other abnormality. No other abnormal signs were found.

Progress and treatment.—During the first 48 hours in hospital, in spite of rest in a darkened room, subcutaneous hyoscine and luminal, and sodium bromide per rectum the movements became more violent. It was impossible to give drugs or food by the mouth and the patient was becoming rapidly weaker, so that it was clear that unless she could be controlled she would quickly die from exhaustion. The problem was similar to that presented by a severe case of tetanus and for this reason it was decided to try avertin. The weight was estimated at 25 kg. (this proved subsequently to be correct) and 2·5 c.cm. of avertin (0·1 g. per kg.) was given rectally under chloroform anæsthesia. The movements were completely controlled and the patient was asleep within a quarter of an hour of giving the avertin and the movements were completely controlled for four hours after which they gradually returned with their former violence. Treatment with avertin was therefore continued, the dosage being regulated by the severity of the returning movements. Food was given by nasal tube. The tube used was a Ryle's tube with the weight removed. It was left in position for most of the next ten days, only being removed once or twice daily for short periods. Cyanosis was relieved by continuous warmed nasal oxygen and injections of atropine sulphate gr. 1/150, at first four hourly but later less frequently.

Avertin treatment had to be continued for 21 days, the frequency of doses being increased to begin with and then gradually lessened. (For details of dosage see Table.)

Table showing Dosage of Avertin

Day of disease (after admission).	No. of doses.	C.cm. per dose.	Total avertin (in 24 hours).	Day of disease (after admission).	No. of doses.	C.cm. per dose.	Total avertin (in 24 hours).
3	1	2·5	2·5	13	3	3	9
4	2	2·5	5	14	1	3	3
5	1	2	2	15	2	3	6
6	3	2·5	7·5	16	0	..	..
7	3	2·5	7·5	17	2	3	6
8	4	2·5	10	18	1	3	3
9	5	2·5	9·5*	19	0	..	..
10	5	2·5	12·5	20	2	3	6
11	4	2·5 (2)	..	21	0	..	..
		3 (2)	9†	22	2	3	6
12	3	3	8‡	23	1	3	3

Totals: Doses, 45. Avertin in 21 days, 115·5 c.cm.
Weight of patient, 25 kg.
* 3 c.cm. returned. † 2 c.cm. returned. ‡ 1 c.cm. returned.

In 21 days 115 c.cm. was given and 73 c.cm. of this was given in eight consecutive days—an average of 9 c.cm. per day or approximately 3½ basal anæsthetic doses per day. Cyanosis was the most troublesome symptom but could be controlled by the measures described. On the third day of avertin treatment signs of basal congestion developed, the temperature rose to 102° F., the respirations quickened, and there was respiratory difficulty. An attempt to reduce the dose of avertin led to a return of movements with their original violence and so repeated doses were continued regardless of the chest condition. After three days this subsided completely.

During the first three weeks of the illness aspirin grs. 15 was given four-hourly and on two occasions small doses of rectal paraldehyde were also given. The first definite improvement was noticed on August 21st, 7 days after avertin treatment had been begun. On the 23rd she was considerably better and was able to take small amounts of fluid by the mouth. On the 28th she was able to answer simple questions for the first time. By Sept. 22nd the movements had practically ceased.

Lumbar puncture on August 24th showed a normal cerebro-spinal fluid; cells normal, globulin negative, sugar normal, cultures sterile. The lævulose-tolerance test done on Sept. 16th was normal; the resting blood-sugar was 0·09 per cent.; and at consecutive 30 minute intervals after lævulose it was 0·1, 0·1, 0·09, 0·09, 0·09 per cent.

The patient was discharged from hospital apparently well, with no movements and no sign of cardiac trouble, on Oct. 10th.

The method used in treating this patient was the same as that used for a case of tetanus neonatorum recently described in THE LANCET [3] and in other cases of tetanus.[4] Such cases show how very useful avertin may be in controlling severe convulsions due to irritation of the central nervous system. None of the patients have taken any apparent harm from repeated dosage. The child with tetanus neonatorum showed normal growth and health after the acute symptoms of the disease had subsided; when one year old he was robust enough to survive a double mastoid operation and at fifteen months he was a healthy and intelligent child. In this patient with chorea there were no signs of any ill effects on discharge from hospital and the lævulose-tolerance test done before discharge showed no evidence of liver damage.

R. E. Hope Simpson [5] has recorded the successful use of avertin in two cases of influenzal meningitis (Pfeiffer's bacillus) in two children aged 9 and 12. In both cases avertin was used in full doses three or four times every 24 hours, in the younger for four and in the older for seven consecutive days. After each dose the head retraction and restlessness were controlled for four or five hours after which they returned. After the initial lumbar puncture no other treatment was used. Both children made a complete recovery.

Such results suggest that avertin may be the sedative of choice in cases of prolonged cerebral irritation which endanger life from exhaustion. In conditions like severe tetanus, status epilepticus, Jacksonian epilepsy, chorea gravis, and prolonged convulsions in meningitis, when milder sedatives fail, avertin used with discretion is probably less dangerous than uncontrolled cerebral irritation on the one hand or the intermittent use of inhalation anæsthetics on the other.

The dangers of giving repeated doses in this way are not yet known and therefore they should be used with caution and care when other methods have failed or would certainly fail. It is not yet known how far some patients may be particularly susceptible to large and repeated doses. Even with this unknown risk however there must be many cases of prolonged irritation of the central nervous system where the risks of using avertin are less than the risks of withholding it.

I am indebted to Dr. C. G. L. Wolf for the lævulose-tolerance test.

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EFFECT OF ASCORBIC ACID ON THE CHEMICAL TESTS FOR BLOOD

BY JOHN F. BARRETT, B.Sc.

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IN the following note attention is drawn to the interference of ascorbic acid with the benzidine and guaiacum tests for blood in pathological specimens.

I have often observed that the chemical tests for blood are much less sensitive when applied directly to urine than when an ethereal extract of boiled and acidified urine is used. In the case of fæces, specimens have been encountered which, when suspended in water and boiled, had the property of discharging the blue colours of positive benzidine and guaiacum tests. It was noted that most of these specimens contained chlorophyll, and I found that an extract of cabbage leaves had this property in marked degree, while fruit juices reacted similarly. The strong reducing power exhibited by fruit and vegetable extracts and by such specimens of fæces is, I suggest, due to the presence of ascorbic acid. In support of this suggestion is the fact that a small quantity of an aqueous solution of ascorbic acid, containing 1 mg. per 100 c.cm., will discharge the colour of a perceptibly blue guaiacum solution. The reaction with benzidine is similar, the blue colour in this case changing to a light brown.

It follows from these observations that, when the specimen is tested without preliminary extraction with ether, there may be present sufficient ascorbic acid or other strong reducing substance to mask the presence of a significant quantity of blood. Ascorbic acid and the reducing substance encountered in the fæces are not extracted by ether from acid solution. It is highly desirable, therefore, that all pathological specimens to be tested for blood by chemical means should be boiled, acidified with acetic acid, and extracted with ether. The blood pigment, if present, dissolves in the ether. At present this technique is employed in order to eliminate false positive reactions due to iodides and oxidising substances in urine, but the method is not in general use.

MANAGEMENT OF EARLY INFANCY

IN a paper read before the Medical Society of Individual Psychology on Nov. 12th, Dr. JOYCE PARTRIDGE spoke of the importance of this stage of life as being the time when the foundations of many of the neuroses are laid. The main source of difficulty was always a breakdown of the normal mother-baby relationship. The cultured mother was at a disadvantage when compared with the natural mother who simply depended on her instincts. Civilisation made it more difficult to act in an instinctive and intuitive manner, and her baby was liable to suffer in consequence from the lack of a feeling of being at one with her. Dr. Partridge put forward the following rules for normal mothers anxious to give their babies the best possible start in life from the psychological point of view: (1) Remember that in the matter of your unborn baby's sex the chances are even. (2) Don't be afraid to follow maternal instinct and intuition; in other words, give scope to your love for your baby, and don't bring him up by rule of thumb. (3) Breast-feed your baby for at least six months. (4) Never leave him alone to cry. (5) Be as much as possible within earshot of him during the early weeks and months of his life. (6) Never in any circumstances scold him nor allow anyone else to scold him for wetting or soiling napkins or any other place. (7) If you must have a nannie, choose one who is your second in command, not one who will make you hers.

MEDICAL SOCIETIES

HUNTERIAN SOCIETY

AT the meeting of this society on Nov. 16th, held at Cutler's Hall, City, under the presidency of Mr. H. L. ATTWATER, the subject of debate was the motion

That the Practice of Voluntary Euthanasia would be Unjustifiable

DR. KILLICK MILLARD (hon. secretary of the Euthanasia Legalisation Society) explained briefly the provisions of the Bill on the subject which had been introduced by Lord Ponsonby into the House of Lords, the second reading having been fixed for Dec. 1st. In spite of all that modern medicine, surgery, and radiology could do, great numbers of human beings still ended their days by a slow and agonisingly painful illness, death coming from exhaustion at the end of it. Euthanasia meant easy death, and voluntary euthanasia was all that was being advocated—i.e., the carrying out of that measure when desired by the patient. It was not applicable to imbeciles and idiots, because they could not be judged to have the power of decision. Neither did it apply to those who had not attained their majority, nor to old people who had become a burden to their relatives. It was intended especially for those suffering from an incurable disease, with severe pain, so that a slow, painful, and lingering death should be supplanted by an easy and painless death. It would not be part of the duty of the ordinary doctor to administer euthanasia; a licence for the purpose would have to be taken out, and safe provision was made for the issuing and signing of the necessary certificates. When this euthanasia had been brought about, it would not be possible to say the patient had died a violent death, and therefore no inquest would be necessary. Euthanasia was essentially a social problem, as it concerned every human being, and he believed it would be looked upon at a future date as one of the great reforms of our era. An increasing number of people were feeling that it did not outrage the highest traditions of civilisation.

DR. G. ROCHE LYNCH pointed out that he was speaking as a private person and not in any official capacity. Certain aspects of the question were worthy of consideration. First, he wondered how many patients suffering from a painful and incurable disease who asked their doctor to put an end to their sufferings really expressed their true feelings when making the request. Was not the desire to continue living one of man's greatest impulses, second only to the procreative instinct? Even if he was sincere in his wish for euthanasia at one time, it might well be that shortly afterwards that wish had either ceased or was much modified. A case quoted by Hammond (*Practitioner*, April, 1934) would illustrate that: A man dying of an inoperable cancer of the bladder repeatedly begged his doctor to give him a dose of morphine sufficient to end his sufferings; but although he knew that in a drawer within his reach was enough morphine to kill many men, he made no attempt to take it. Second, there was no doubt that to-day euthanasia was practised by medical men in this country. He had no reason to think it was not done in a proper and honourable way; was it not better to leave undisturbed a practice which had been carried out from time immemorial? Third, if there was need for legislation on the subject, it was necessary to be logical and regularise the medical man's position. Both therapeutic abortion and the destruction of monsters at birth should be made legal acts. Assuming, however, that there was need for legislation on euthanasia, the provisions of the Bill under discussion would in his opinion defeat its objects by its elaborate requirements. There must be first an application in documentary form by the sufferer with the necessary witnesses to the signature, then two independent medical certificates. After these had been sent to the referee, he must then personally visit the patient, and later on an appointed day the euthanasia administrator would visit the patient and administer the lethal drug. This meant that the patient, having expressed his desire, must await, in an agony of suspense which might be likened to that of a condemned criminal, the actual release from life. And it was not to be administered by his own family doctor. Surely it was better for his doctor on one day unknown to him to give him a drug which would make him sleep and never wake up. As the method of euthanasia was to be prescribed could it always be certain in every case? What more terrible thing could happen than for the patient to wake up again? He had heard of one case of a woman who at one stage was receiving 90 grains of morphine to allay pain. Euthanasia, even voluntary, was pregnant with criminal possibilities, and any Act that was passed would have to have adequate safeguards. At the present time he was unable to offer any constructive propositions which would do this and at the same time permit of euthanasia being practised by legislation on more humanitarian lines.

Canon H. ANSON (Master of the Temple) said he found it difficult to understand exactly on what ground the opposition to the Bill on the subject rested. Some declared that many doctors already carried out euthanasia in suitable cases on their own responsibility. That, he felt, was a risky proceeding; it would be more satisfactory to have legal safeguards. There were more criminal possibilities without than with such legal recognition and safeguard. And he thought it was bad for the doctor to pass on to the patient the responsibility for ending the life of the latter. Liberty to exercise choice regarding the birth of individuals was conceded, why should there not be equal liberty to end a life whose only prospect was continual agonising pain from an incurable disease? Missionaries in the tropics were often told that if they stayed there they could not live long; yet they preferred it to prolonging their lives in more congenial surroundings. Euthanasia should be brought about only under the best medical advice. Many people did not fear death; what they dreaded was dragging on in practically intolerable pain.

Mr. GILBERT RYLE, speaking as a moral philosopher, wished to state a case against the legalisation of euthanasia and against the conventionalisation of it—i.e., against making it a part of the recognised code of medicine even though it might not be legally legalised. There was, first, the sanctity of life; no man was justified in taking the life of another for the killer's pleasure or advantage. There was a risk in every serious operation, as there was in many actions in daily life, and many actions were the better for having a risk in them; even motor-driving in the streets carried a risk of death, either to the driver or to pedestrians. He did not base any part of his case on the statement he had heard put forward that suffering was always or could be by its nature ennobling; in many cases certainly it was nothing of

the kind. In objecting to the legalising of euthanasia he realised there might be special cases in which the doctor could facilitate the suicide of another man; it might sometimes be considered by a friend to be his duty to shorten the life of his friend, and a doctor might stand in that relation to his patient. But such isolated cases did not alter his general feeling. It was conceivable that a patient having fits of melancholia might wish his life ended in one of his acute fits of depression, whereas in a brighter period he might have no such thoughts. Intimidation, even blackmail, might hurry a decision to have euthanasia if it were legalised. A man might have such keen commiseration for his wife and others in his family on account of the anguish his suffering caused them that, if it were legal, he would possibly ask for euthanasia when in other conditions he would be willing to endure his agony. And doctors must differ greatly as to what was the intensity of suffering of the patient, and even as to the curability of certain diseases. Though taking life might be justifiable in certain extreme cases of suffering he was against any attempt to set up a legalised set of rules to govern such conduct; any such code would be open to much abuse, and would frequently break down in practice.

Sir WALTER LANGDON-BROWN remarked that the beginning and the end of life were naturally charged with an intense emotional content for us all; therefore the subject should be approached with due regard for the views of others. On such a topic as this it was natural that public opinion should move slowly, but it was moving now. In his boyhood cremation was regarded with horror, and Charles Bradlaugh and Annie Besant were imprisoned for advocating birth control, whereas at the present day birth control was the subject of a circular from the Ministry of Health. Voluntary sterilisation, also, was the subject of official literature from the Board of Control. He was indifferent as to the immediate fate of the present Bill, as it would be a mistake to try to rush the matter. The word "voluntary" should be noted. The possibility of the dethronement of liberty always caused alarm, but liberty must not be carried to the extent of interfering with other people in the social organism; it did not mean one had the right to prevent other people from doing what they believed to be right because one thought it was wrong. Had one the right to refuse an old man means to escape from suffering abominable and continuous pain caused by a hopeless disease? Some went so far as to say that medical progress might be facilitated by refusing voluntary euthanasia; the suggestion implied a mass experimentation on human beings from which he shrank. Relatives of dying people showed two kinds of reaction; one was the desire to prolong life to the end, however bitter that end might be. There the physician's duty was clear; he must do it if he can. The other reaction was the wish that the patient might be spared all unnecessary suffering, the physician being told, in effect, "Don't try to prolong life if the position is hopeless." A disease running a slow and painful course to an inevitable end was a horrible issue, made worse if the patient longed for death; worse than death was the condition of a patient reduced to a vegetative state below that of the average animal. Dr. Roche Lynch had said many patients expressed a wish to die without really meaning it, and then set out to show that the safeguards proposed in the Bill were unsuitable. That was followed by the admission that irregular administration of euthanasia was constantly being practised in the profession, and that this might be preferable to the legalised practice provided for in the proposed Bill. That, it seemed to Sir Walter, was assuming a very grave responsibility on the score of malpraxis. He also objected to Mr. Ryle's suggestion that the doctor was unable to judge as to the severity or curability of a condition; he should be conceded the right to judge when a patient should be granted euthanasia if he desired it.

Dr. N. PINES said he had been surprised to hear that some doctors practised euthanasia privately. A case must be very bad indeed to justify that. It was, however, more merciful to carry out euthanasia than to allow a death to be slow and agonising.

A general practitioner said many people suffering ghastly pain would not end their suffering by death, even though means might be available. He had been carrying out euthanasia in very severe cases ever since he had been in practice.

Mrs. HODSON said not many practitioners had the courage to undertake such a responsibility, and she admired those who had.

Mr. WILLIAM IBBOTSON, speaking as a surgeon, held that it was not difficult for the doctor to decide, in his own mind, what was the right thing to do when patients for whom there was no hope were suffering intensely.

Dr. C. COTTER said surreptitious euthanasia carried out by doctors was contrary to the whole scheme of the relationship between a patient and his doctor. In view of the implicit trust imposed in the doctor, the latter had no right to decide for his patient in such an issue.

Dr. P. B. SPURGIN agreed that legalised murder or euthanasia was contrary to all the tenets of the medical profession. Who was to decide when pain was intolerable? Even when the disease was incurable drug therapy could be so regulated that its cumulative effect was to produce a comfortable instead of an agonising ending.

A barrister pointed out that medical practitioners who practised euthanasia were acting contrary to the law. If only to relieve doctors faced with terrible cases from their dilemma he thought it eminently desirable that such a Bill as that now projected should become law.

Dr. A. BENJAMIN said it was no argument against a proposed measure to say it might be abused; any good thing could be abused. If euthanasia was made legal, it could be carried out only if the patient asked for it. His own view was that such a law would increase confidence between doctor and patient, as the patient would feel that if enduring intense suffering, with no hope of cure, he had a friend at hand who would end it.

Dr. STOLKIND objected to the idea of legalising voluntary euthanasia.

Mr. A. E. ROCHE contended that the function of the doctor when a patient's disease was fatal was to deaden the pain, not to deaden the patient. He had heard it said that three things were chiefly used in severe cases: alcohol to induce sleep, opium to deaden the pain, castor oil to counteract the constipation produced by the opium.

Dr. MILLARD, in a brief reply, pointed out that the word "intolerable" in reference to pain had been expressly avoided in the Bill.

Mr. RYLE also replied, contending that the legalising of euthanasia would make possible abuses which would be dangerous to society.

Prof. GREY TURNER, in thanking the speakers, said he was not afraid of this Bill; even if it was passed he felt certain it would be a dead letter.

REVIEWS AND NOTICES OF BOOKS

Surgery for Dental Students

By PHILIP H. MITCHINER, M.D., M.S., F.R.C.S., Hon. Surgeon to H.M. The King; Surgeon and Lecturer in Surgery, St. Thomas's Hospital; CLEMENT E. SHATTOCK, M.D., M.S., F.R.C.S., Surgeon and Lecturer in Surgery, Royal Free Hospital; EDWARD G. SLESINGER, O.B.E., M.S., B.Sc., F.R.C.S.; Surgeon and Lecturer in Surgery, Guy's Hospital; and CECIL P. G. WAKELEY, D.Sc., F.R.C.S., F.R.S.E., Senior Surgeon and Lecturer in Surgery, King's College Hospital. London: Baillière, Tindall and Cox. 1936. Pp. 364. 12*s*. 6*d*.

THE object of this book is to provide the dental student with a brief account of general surgery, sufficient to cover the requirements of the several examining boards in dental surgery. It has the advantage of being written by a group of men, all of whom are either attached to a dental school or have experience in examining dental students. In a remarkable fashion the authors have compressed a great mass of material into a small compass, presenting the whole range of surgery in a simple straightforward manner and, what is extremely important, in a way intelligible to those who have a minimum of anatomical and physiological knowledge. Particular attention has been paid to those allied or associated conditions which the dental practitioner is liable to meet in the practice of his profession. The book is very well printed and illustrated and should become popular amongst dental students.

Exophthalmic Goitre and its Medical Treatment

Second edition. By ISRAEL BRAM, M.D., Medical Director, Bram Institute for the Treatment of Goitre and Other Diseases of the Ductless Glands, Upland, Pa. London: Henry Kimpton. 1936. Pp. 456. 25*s*.

OF recent years most authorities on diseases of the thyroid gland have abandoned as untenable Plummer's hypothesis that exophthalmic goitre and toxic adenoma are distinct diseases. Dr. Bram, who has had a large experience of thyroid disorders, still holds the generally discarded view. The arguments which he adduces in support thereof are not convincing. He fails to appreciate the reasons why the manifestations of hyperthyroidism may be slight when Graves's disease occurs in older people with a nodular goitre (so-called toxic adenoma). There may be (1) degenerative changes in the thyroid, (2) numerous undifferentiated nodules which react but slightly, and (3) little active thyroid tissue to respond to the stimulus. Nor does Dr. Bram take account of the fact that cardiac conditions, such as auricular fibrillation, often dominate the clinical picture in "toxic adenoma" owing to the extra load of slight hyperthyroidism on a myocardium already damaged by pre-existing arterio-sclerotic or rheumatic changes. If the presence of adenoma is a factor predisposing its victims to "toxic adenoma," as Dr. Bram affirms, it is surprising that the latter does not occur more frequently in regions of endemic goitre, where it is comparatively uncommon.

The chapters which deal with the signs and symptoms of Graves's disease are in general admirable. Their only flaw is the rather unnecessary division of the condition into some two dozen different types; such a procedure could be unending in almost any disease. As to management, the author emphasises the need of medical treatment especially on the psychotherapeutic side; most physicians will agree that this is essential in a disease where psychogenic factors often play an important part in ætiology. Dr. Bram rightly deplores the wholesale surgical measures often adopted, but English physicians would consider that he goes too far in his assertion that little over 2 per cent. of patients with Graves's disease should be submitted to thyroidectomy. He backs up his opinion by a claim that of 2600 cases treated solely by medical means 90 per cent. were cured, and most of the remaining 10 per cent. are enjoying complete social and economic usefulness, and that the mortality-rate of 3920 patients so treated was only 0·3 per cent. These figures are remarkable; such a degree of success has not been obtained by competent physicians in this country.

1. Reactions of Organic Compounds

By WILFRED JOHN HICKINBOTTOM, D.Sc., Ph.D., F.I.C., Lecturer in Chemistry in the University of Birmingham. London: Longmans, Green and Co., Ltd. 1936. Pp. 449. 16*s*.

2. A Textbook of Organic Chemistry

Third edition revised and extended. By the late Dr. JULIUS SCHMIDT, formerly Professor of Chemistry in the Technische Hochschule, Stuttgart. English edition by H. JORDON RULE, Ph.D., D.Sc., Lecturer in Organic Chemistry, University of Edinburgh. London: Gurney and Jackson. 1936. Pp. 865. 25*s*.

3. Outlines of Organic Chemistry

Second edition. By E. J. HOLMYARD, M.A., M.Sc., D.Litt., F.I.C., Head of the Science Department, Clifton College. London: Edward Arnold and Co. 1936. Pp. 467. 7*s*. 6*d*.

1. Mr. Hickinbottom's book approaches the subject of organic chemistry from an original standpoint. It contains just that blend of theory and practice which invests the rather dry material of the theoretical text-book with the interest of practical applications. Many of the so-called general reactions quoted in text-books are found in practice to have a very limited range and the author has set himself the task where possible of pointing out such limitations. The book is divided into 11 chapters commencing with hydrocarbons and passing on to hydroxy and thiol compounds, ethers and thio-ethers, and so forth to sulphonic and sulphinic acids, sulphones and sulphoxides. A valuable feature is the lavish supply of references throughout the text from both the older and the most recent literature. Preparations with practical details, which are extremely plentiful and varied, are printed in smaller type. An appendix of some twenty odd pages is devoted to a very well-planned scheme for the identification of organic substances. The book may be highly recommended as a really useful contribution to the efficient study of organic chemistry.

2. The previous English edition of Prof. Schmidt's well-known text-book appeared in 1932 and to accord with the advances in knowledge of the chemistry of biologically important substances the sections dealing with the complex polysaccharides, chlorophyll and hæmoglobin, vitamins, sterols, and sex hormones have been revised. Owing to the nature and general scope of the book the accounts are somewhat sketchy,

but will probably suffice for a student reading for a degree in chemistry. The general arrangement remains unaltered and the size of the book has only been increased by some ten pages.

3. In producing a new edition after several reprints of the original edition the author has subjected the text to considerable revision and has brought it up to date, both as regards academic and industrial practice. A new feature is an elementary account of the electronic theory of valency as applied to organic chemistry. The book is illustrated with six plates of distinguished chemists.

Grundriss der inneren Medizin

Tenth edition. By A. VON DOMARUS, a.o. Professor in the University of Berlin; Medical Director of the Horst-Wessel-Krankenhaus in Friedrichshain. Berlin: Julius Springer. 1936. Pp. 681. RM.16.80.

Prof. von Domarus, a pupil of Friedrich Müller, offered the first edition of this book to the German medical student in 1923 as an outline of medicine, a foundation on which to build the mass of knowledge he would acquire in the lecture theatre and in the wards. It has achieved its tenth edition in thirteen years. It is of roughly the same size as the standard text-books used by the English student, and its clear, compact style—for the German language is capable of extraordinary succinctness—packs it full of material. This material is good, and the outlook is in the Müller tradition, clinical and practical. Differences there are, of course, between German and English teaching, such as the apparently greater German belief in the value of various drugs, but in the main the two run parallel. There are short introductory sections through the book on physiological principles and methods of examination. Illustrations are few but useful. The heart section clings too closely to an anatomical classification; an ætiological subdivision is better because it renders possible a description of each variety of heart disease as it affects, or may affect, a patient over a course of years, and gives not only a sounder biological point of view, but a better basis for the patient's management and treatment.

The English student who reads, or hopes to read, German easily, might with advantage keep this book on his shelf and consult it from time to time in parallel with his favourite English text-book.

Strange Places and Strange Peoples

Or Life in the Colonial Service. By Sir REGINALD ST. JOHNSTON, K.C.M.G., M.R.C.S. London: Hutchinson and Co., Ltd, 1936. Pp. 286. 12*s.* 6*d.*

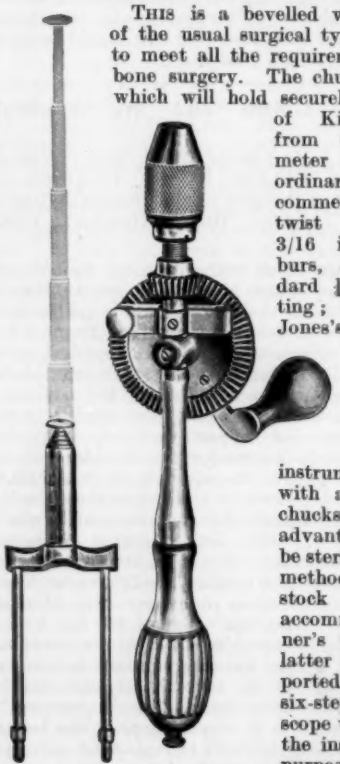
THIS volume is a sequel to one recently reviewed in these columns (THE LANCET, March 21st, p. 668) in which Sir Reginald St. Johnston, barrister, doctor, and administrator, recounted experiences which he had undergone, and which he had obviously enjoyed during 30 years in the Colonial Service. That book was a chronological record of the author's life in the Colonies, and the new volume is an expansion of its predecessor, and includes many entertaining stories showing intimate acquaintance with all aspects of life in the West Indies.

A doctor in the Colonial Service, who became a governor in the Crown Colonies and who read for and was called to the Bar whilst on leave, must be remarkable for his energy and Sir Reginald's favourite motto is "Never say die." He writes easily, as one might imagine he would talk over the dinner-table, and while his style is colloquial, his attractive and optimistic personality pervades every page. The book is not uniformly interesting; some of the incidents narrated are so slight as to amount to little more than lists of distinguished names. But of the author's genuine interest in the places and peoples of the West Indies in and among whom he spent his working life there can be no doubt. Wherever his work took him, he obviously concentrated on finding out all he could about local conditions and devoted himself vigorously to their betterment. Sportsmen will like the story of Admiral Hunt who ended a very official telegram with the words "has the shooting season started yet?" Another of many which might be quoted is the one of the man who electrified a sedate dinner party by proposing the health of "the other woman, not our wife, in whose arms we have . . . enjoyed some of the most blissful moments of our lives. I refer to—our Mothers."

Simplicity, cheerfulness, courage, and an unbounded faith amounting to certainty in the essential rightness of British Imperialism are, perhaps, some of the characteristics which have contributed to the making of a deservedly successful career and, incidentally, of this successful book.

NEW INVENTIONS

A BEVELLED WHEEL-ACTION DRILL



THIS is a bevelled wheel-action drill of the usual surgical type, but modified to meet all the requirements of modern bone surgery. The chuck is of a type which will hold securely: (1) all sizes of Kirschner's wires from 0·75 mm. diameter upwards; (2) ordinary unmounted commercial type Morse's twist drills up to 3/16 in.; (3) drills, burs, &c., with standard ¼ in. surgical fitting; and (4) Watson Jones's (or similar) guide pins for canalised triradiate nails, for fractures of femoral neck. This instrument dispenses with a multiplicity of chucks, and has the advantage that it can be sterilised by ordinary methods. The drill stock is hollow to accommodate Kirschner's wires, but the latter are best supported by means of the six-step collapsible telescope which attaches to the instrument for this purpose.

My ideas have been carefully carried out by Messrs. Down Bros. Ltd., 22A, Cavendish-square, W.1, from whom the drill can be obtained.

D. MCKELVEY, *M.C.*, M.D.Edin., F.R.C.S.Eng.,
Major R.A.M.C.

THE LANCET

LONDON: SATURDAY, NOVEMBER 21, 1936

BASES OF NATIONAL FITNESS

SPEAKING at Guy's Hospital a few weeks ago [1] Lord DAWSON drew attention to the separate parts played by physical education on the one hand and by sport and physical recreation on the other. The distinction is appropriately made at a time when public opinion is awakening to the fact that systematic cultivation of the body is as much a matter of national concern as is education of the mind. "In physical education," Lord DAWSON said, "movements are designed to educate the body in structure and function." This definition, where every word is used pointedly, has two implications. First, physical education is truly a form of education; it is a plan of campaign that has been designed to further the development of the body; its teachers should be specifically trained and must keep the needs of the growing child always in view. Secondly, more than other forms of education, it belongs to the period of growth of the body. Of course it has also a subordinate place in developing the physique of adults and in therapy; but first and foremost its object is to teach the body to form and perform well. Physical education makes use of physical recreation, and sometimes of drill too; but it is not made up of these alone. Games and drill teach leadership, quickness of response, obedience, and discipline, but other means are often required to develop self-control and to meet individual needs.

The Government have given assurances that measures, backed by the Exchequer, are to be taken to promote the physical education and the physique of the youth of the country. In this aim they will be supported by all who care about the health of the people—for whatever reason—and there is no doubt that sickness can be reduced by such measures and by encouraging healthier occupations in leisure hours. If, however, the Government are to gain credit for incorporating physical education in their programme we may fairly ask in return that they shall give mature thought to their plans. Various difficulties beset any hurried provisions. Probably it will not be very hard to find time and staff for more physical education in elementary schools, and with money much-needed apparatus might be added to the present stock of ropes and jumping poles. But the unconsidered imposition of greater demands on the secondary school child, whose time and energies are nowadays devoted to preparation for examinations, might even make matters worse. And then there are the large numbers of adolescents who left school at fourteen, who might, whether employed or otherwise, benefit greatly by physical education. The difficulty here is the dearth of trained teachers and the danger that their numbers will be made up hastily from those trained to drill adults and not at all trained to educate the growing body. This would risk a grave setback to the cause of physical education and of individual development.

Provision for sport and physical recreation is easy to welcome, but, as so many people have pointed out, hard games increase food requirements; and many of those who would gain by playing football can ill spare calories to play it with. The Army authorities, it will be remembered, have lately been conducting grimly successful experiments in which rejected recruits were brought up to standard by a course of physical training plus good food. In last week's debate Lord HORDER spoke, we believe, for the whole of the medical profession when he said that fitness for living, fitness for working, fitness for fighting if it must be, can never be obtained by physical measures: there are still more basic things that are imperative—food, shelter, air, and leisure. And a medical writer in one of the daily newspapers has summed up the national needs with even greater brevity when he put "stomach before brains, food before uniforms, happiness before physique, health before wealth, individual courage before regimented swank." As spokesman for the Government Sir KINGSLEY WOOD has said that they are meaning to take a wide view, and it is to be hoped that their schemes will cover a wide field. For example, the permission still given to industrial concerns to employ boys and girls—no more than children—for ten, twelve, and even fifteen hours a day [2] is utterly inconsistent with a policy of raising the national health; and one of the first steps in carrying out such a policy must be to make the new Factory Act an instrument of drastic reform.

NEW REMEDIES FOR HÆMOPHILIA

WITH its uncontrollable hæmorrhages and its incidence in the royal houses of Europe, hæmophilia fulfils the popular requirements for clinical dramas; and perhaps for this reason it has had more attention than other diseases numerically more serious. Of the many papers lately published on the subject one of the most interesting is the one from Sheffield that appeared in our last issue. In a communication remarkable for the modesty of its claims Dr. TIMPERLEY, Prof. NAISH, and Prof. CLARK record the treatment of thirteen hæmophilics by the parenteral injection of one of two preparations—a substance obtained from egg-white and a "derivative of mucic acid"—and their data leave little doubt that these preparations have a beneficial effect as shown both by the fall in coagulation-time and by clinical improvement.

Dr. TIMPERLEY and his collaborators do not at present discuss the nature of the injected substances

[1] THE LANCET, Oct. 17th, 1936, p. 937.

[2] See the Ann. Rep. of Chief Inspector of Factories for 1935. (Reviewed in THE LANCET, August 1st, 1936; p. 278.)

nor the way in which they act. The egg-albumin product is obtained by incubation of egg-white with potassium bromide at 37° C. for three days; alcohol is then added and the precipitate removed by filtration, the active substance being recovered from the filtrate by precipitation with acetone. This substance is freed from potassium bromide by dialysis, dried in vacuo at 60° C., and finally redissolved in 0·9 per cent. potassium chloride solution, after which it is ready for injection. The final product thus obtained gives the usual protein reactions, but a later refinement of preparation produced a substance which was apparently protein-free. This egg-albumin derivative was originally prepared by Dr. TIMPERLEY for some other purpose; but on observing that under certain conditions it produced a clear structureless irretractile gel on addition to blood in vitro he thought of its use in hæmophilia. From the method of preparation it seems possible that it is a phospholipin. This would be of great interest inasmuch as substances in this group, such as lecithin and cephalin, are the basis of several proprietary hæmostatics and are usually held to act by disrupting the prothrombin-fibrinogen complex. Intravenous injections of these phospholipins in large amounts have produced intravascular clotting in animals. The use of cephalin in hæmophilia was investigated by HURWITZ and LUCAS [1] who found it a valuable local hæmostatic but inactive when given by mouth, subcutaneously, or intramuscularly. W. H. HOWELL claimed good results from oral administration of cephalin and the substance has also been injected intravenously, though this is risky. A remarkable characteristic of the Sheffield product is that, although coagulant in vitro, it does not prevent the formation of hæmatomata at the site of injection, which suggests that its local action in vivo is weak. However, any detailed discussion of its mode of action is clearly premature until the investigators are able to provide more information about its chemical nature. The second preparation they have used is described as a derivative of mucic acid, and it is difficult to see any relation between this and the previous substance, since mucic acid (COOH.[CH.OH]$_4$.COOH) is a simple oxidation product of galactose. Certain cerebrosides, however, contain this sugar and their oxidation might yield products that could be regarded as mucic acid derivatives. Dr. TIMPERLEY and his colleagues do not give their reasons for the use of this second substance, and we are left in ignorance whether it was a logical development from the egg-albumin derivative or another fortunate inspiration.

In commenting on so important a communication it is right to err on the side of hypercriticism, and one may point to flaws in technique whose absence would have made the investigator's position apparently impregnable. In the first place it is stated that the coagulation-time was estimated at room temperature, whereas hæmatologists generally agree that it should be estimated at 37° C. The effect of temperature on the coagulation-time of hæmophilic blood is undoubted and MACFARLANE'S curves [2] showed that at 30° C. the time may be 28 per cent. shorter than at 15° C. Room temperature may well vary between these two figures at different times of year. Secondly the modification of the Dale-Laidlaw technique used for the estimation of coagulation-time is open to objection; it has been employed by others (MACFARLANE) and discarded because the loose and heavy shot may on occasion defibrinate the blood. It seems probable that this happened in Case 1 in which no clot was present after 72 hours—a very unusual finding in hæmophilia. While these criticisms do not detract from the importance of the work, experience of many other means of treating hæmophilia enjoins a conservative attitude; and this the Sheffield workers have themselves adopted. Though circumstances have made it advisable for them to issue a report that must still bear some of the marks of a preliminary communication we may confidently hope that more information will soon be forthcoming about the nature of the substances used. Meanwhile, although it is academically satisfying for therapy to have a sound theoretical basis, the fact that the new remedies are still empirical will not spoil their welcome if their usefulness can be confirmed.

[1] Hurwitz, S. H., and Lucas, W. R.: Arch. Internal Med., 9116, xvii., 543.

THE PHON AND THE BEL

THE Anti-Noise League, of which Lord HORDER is chairman, is becoming recognised as a responsible public body consulted by departments of State and commercial interests. The league has only just completed its second year of life but the report [3] just issued is a fine record of achievement. More than that, the report avoids the preventable dullness which its preamble suggests is even worse than unnecessary noise. The report recalls the important fact that a committee of the Ministry of Transport, of which Dr. KAYE is chairman, has initiated noise tests on a large variety of new motor vehicles. As a result of tests made at the National Physical Laboratory the committee suggests [4] an upper limit of 90 British standard phons for any type of motor vehicle. Two tests are proposed to decide whether motor vehicles conform to this limit—one with the vehicle running at 30 miles an hour at full throttle on the gear preferred by the driver, the other when it is stationary and the engine racing at maximum power speed. The report confirms the common impression that while the majority of ordinary motor-cars do not offend the ear many sports cars and motor bicycles make far too much noise. It is satisfactory to learn that the Minister of Transport has received assurance from the manufacturers that they will not in future put on the market any vehicle the noise of which can be regarded as offensive.

Before noise can be regulated it must be defined and we note that the departmental committee

[2] Macfarlane, R. G.: St. Bart's. Hosp. Reps., 1935, lxviii., 229.
[3] Noise Abatement. Second annual report of the Anti-Noise League, 66, Victoria-street, London, S.W.1.
[4] Ministry of Transport. Noise Committee. Chairman: G. W. C. Kaye, D.Sc., superintendent of the Physics Department, National Physical Laboratory, Teddington. Second interim report. H.M. Stationery Office. 1s.

has expressed its results in terms of the "phon"—the new unit of "equivalent loudness" adopted by the British Standards Institution.[5] It is proposed that the term "decibel," formerly employed for expressing sound values, should now be restricted to energy and power relations. The bel signifies a 10-fold increase in energy, two bels a 100-fold increase, three bels a 1000-fold increase, and so on. Provided with such three-league boots we can traverse the enormous intensity range (10 million million fold) of the ear in as few as 13 geometrically progressive steps. But the steps are too big for practical convenience and it is usual to speak of 130 decibels rather than 13 bels. Arithmetically a decibel denotes approximately a 5/4 increase, and this corresponds roughly to the smallest change of intensity which can be detected by the ear under average conditions for sounds of medium frequency and moderate loudness. It is however not the energy of a sound that matters to us but its noisiness, and auditory diagrams of the ear show that while loudness, as appraised by the average ear, is manifestly related to energy, as measured by physical instruments, the two do not normally keep in step, particularly for notes of very high and very low frequencies. At feeble intensities the selective preference of the ear for medium pitched notes is pronounced, and it is only at high intensities that equal increments of energy produce even approximately equal increments in loudness.

The situation is met by setting up a standard reference scale of loudness obtained by selecting a pure tone of specified frequency and operating it by a progressive series of measured steps of energy. On the British standard scale of loudness the reference tone has a frequency of 1000 cycles per second and an arbitrary zero of energy near the threshold of hearing. If the reference tone is operated by successively increasing decibel steps of energy, the resulting changes of loudness are expressed in numerically identical steps on a scale of phons. That is, if the reference tone is excited by an intensity of n decibels above the zero, the loudness is n phons. The equivalent loudness of any other sound or noise is evaluated by matching it by ear against the suitably adjusted reference tone, the numerical value of the latter in phons then giving the equivalent loudness of the sound to be measured. By this procedure, which rests on the admitted ability of the average individual to match equality of loudness, has been set up a subjective scale of equivalent loudness, the unit being the phon. It happens that for many common noises the loudness level in phons is numerically equal to the intensity level in decibels. The German phon differs slightly from the British, but the American scale agrees with the British, except that in the U.S.A. it is still customary to use the decibel not only for expressing intensity measurements but also for loudness levels, it being implied in the latter case that the decibel figure quoted refers to the energy level of the standard tone when it matches the sound to be measured.

[5] See "Glossary of Acoustical Terms and Definitions," published by the B.S.I. 3s. 6d.

The introduction of the phon, which has already proved of great service, has come in the nick of time to meet the present public demand for the reasonable abatement of noise. The ability to measure is in fact vital to such a movement. Both objective and subjective noise meters are now commercially available. Purchasers would however do well to demand a calibration certificate by the National Physical Laboratory.

PEACE IN RETIREMENT

THE risks of legal liability and litigation, unfortunately inseparable from medical practice, do not come to an end when the practitioner retires. If, on retirement, he hastens to cancel his membership of a professional defence society, he may be putting off his armour prematurely. One of these societies, as the letter from its president (see p. 1234) shows, has produced an excellent scheme under which its protection can be continued by a small lump-sum payment to cover the years of retirement. The amount of the payment varies with the length of previous membership. A practitioner who has been a member for fifteen years, for instance, can become a life member for as little as a guinea. Naturally if, as sometimes may happen, the retired practitioner returns to actual practice, his subscription would need to be readjusted. It is easy, too, to imagine cases on the borderline of retirement where special circumstances will justify special consideration. Without entering into these administrative details, we can commend the general principle of continued protection. We do so because it is probable that medical men do not always realise that, when the time comes for them to leave the surgery and the consulting-room for the last time, they carry with them the risk of legal liabilities. It will be six years before the Statutes of Limitation interpose their beneficent shield to ward off claims for damages in respect of some alleged negligence in the past. The liabilities are nowadays the more extensive and the more complicated because, by a change in the law enacted by Parliament two years ago, personal actions no longer cease at death. Thus the death of a patient, instead of closing a chapter, may positively invite his or her relations to initiate some legal action. The law courts have already found difficulty in defining the application of the new law. There is no need to exaggerate the terrors of litigation which may threaten the retired practitioner; but, if his motto be "Safety First" and if his object be a quiet life, the new scheme of life membership should save him from anxiety.

AFTER seeing the world as a ship's surgeon Mr. Johnston Abraham recorded his experiences in "The Surgeon's Log," published in 1911. We declared the excellence of this book at the time of publication but did not venture to foretell that twenty-five years later it would come of age in a 21st edition of 60,000 copies. Those of Mr. Abraham's colleagues to whom the narrative is still unknown will now be able to purchase it, as a Penguin book, for sixpence.

ANNOTATIONS

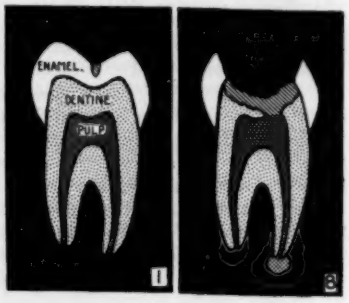
THE NORMAN LOCKYER LECTURE

IN his lecture last week to the British Science Guild, which is now merged in the British Association, Lord Rutherford surveyed the great tide of advance in the physical sciences during the past forty years, paying high tribute to the inventive capacity of Dr. Gaede which has made it possible to produce a high degree of vacuum by simple mechanical methods. It was the production of high vacua by the mercury pump which led to the discovery of X rays and of cathode rays, and its further development has served the modern industry of electric light bulbs, wireless valves, and rectifiers. Lord Rutherford gave an example of what a good diffusion pump of the oil type will and will not do. Such a pump can reduce the pressure of gas in a vessel to about 10^{-11} atmospheres, but even at such a level of exhaustion the space is hardly beginning to be empty, for each cubic centimetre still contains about 270 million molecules. Nevertheless the molecules can move about with great freedom. At this pressure the mean free path of a molecule is something like 5 kilometres. This means that in a spherical vessel of (say) 100 c.cm. capacity the molecule of gas rebounds from the walls of the vessel about 100,000 times before it collides with any other molecule. Hence a stream of fast electrons or molecules can travel in straight lines through such a rarefied space with only very occasional collisions.

At the end of his lecture Lord Rutherford referred to the possible danger to the community of the unrestricted development of scientific invention. Taking a broad view he is satisfied that the progress of scientific knowledge has been overwhelmingly beneficial to mankind. But scientific men, he thinks, have shown themselves unduly sensitive to criticism. It has been suggested that they should be more active in controlling the wrong use of their discoveries, but except in rare cases Lord Rutherford doubts whether even the most imaginative scientific man is able to foresee the ultimate effect of any discovery. He does however suggest that some control of the rate of application of new ideas or inventions to industry may be desirable to prevent dislocation of capital or labour. It would be an advantage to the State to know the probable changes to be expected in industry before new inventions are put into operation; and for this reason he would like the Government to set up a "prevision committee" of an advisory nature which might graduate the rate of change and so prevent too serious dislocations in the social order. A competent committee of this kind might have foreseen the coming competition between motor and railway transport, and helped to adjust competing claims before the difficulties became acute.

DENTAL CARIES

Sir Francis Acland told the Dental Board at its meeting on Nov. 10th that well over a million copies of the leaflet entitled "The Story of a Tooth" had been asked for by local education authorities; and this was by no means the end, as something like half these authorities had not yet replied to the Board's offer. The excellent feature of this piece of propaganda is that it is incontrovertible; one might almost say both hors de combat and hors concours, for it is strictly outside the arena of conflict about the causation of dental caries. Whatever may be the relation of dental caries to diet or to the care of the mouth, there is no question about the merit of the Dutch boy who prevented the destruction of his country by stopping the first tiny hole in the dyke. The only claim made in "The Story of a Tooth" is as follows: "If boys and girls would let the dentist mend their teeth when the holes are tiny, the story would have been very different, and a lot of trouble would be saved." The narrative is well within the compass of the average boy or girl at school, and is illustrated by nine sections of teeth printed in six colours. Two of these pictures here reproduced on two-thirds of the actual scale give little idea of the effectiveness of the coloured series as it appears in the pamphlet. The idea came from Mr. B. R. Townend, senior dental officer of the West Riding of Yorkshire, who also largely assisted in working it out. The Board has already spent £1400 in producing the first million copies, and is proposing to spend further money on this form of dental health education. And this is well, because the evidence suggests that with existing propaganda it is not possible to achieve much more than what is now being done. Under present conditions the pre-school child is often only referred for dental treatment when the condition of its mouth is so bad as to be endangering its health and when there is nothing for it but to extract the teeth. The situation thus created is admittedly one of the most pressing hygienic problems of our time, for dental caries leads to oral sepsis and then to infected cervical glands and digestive disorders of various kinds. Whether sufficient provision is available or can be obtained for the children who need it may be in doubt, but any such provision is useless unless the danger of neglected teeth is sufficiently appreciated to secure the coöperation both of the parents and the children. For an effective piece of propaganda sincere thanks are due to the Dental Board and to Mr. Townend.



GARGOYLISM

UNDER this name was recently described[1] a syndrome characterised by a peculiarly grotesque heavy facies, corneal opacities, enlargement of the liver and spleen, mental deficiency, and chondro-osteo-dystrophy, the bone changes resembling more or less closely those seen in the condition described by Morquio and others and now generally known by that author's name. It is probable that Morquio's disease and gargoylism are closely connected, although the widespread nature of the abnormalities in the latter suggest a metabolic disorder—a suggestion supported by the discovery of changes resembling those of juvenile amaurotic idiocy in a case that came to autopsy.[2] Ellis, Sheldon, and Capon[1] reported 7 cases and reviewed 10 collected from the literature,

[1] Ellis, R. W. B., Sheldon, W., and Capon, N. B.: Quart. Jour. Med., 1936, v., 119.
[2] Tuthill, C. R.: Arch. Neurol. and Psych., 1934, xxxii., 198.

the first 2 having been described in 1929 by Hurler.[3] No doubt others have been recorded, and the fact that during the present year in this country another typical example, and a *forme fruste* in two brothers, have been shown before the Royal Society of Medicine indicates that the condition is less uncommon than might be supposed. Prof. Cornelia de Lange and Dr. Woltring [4] have now described a similar *forme fruste*, in which the corneal opacities were lacking, in two brothers. These boys showed the heavy features and large heads that had suggested the name of gargoylism, though the abnormality was less than in the fully developed syndrome. The mental development was retarded, the liver and spleen were enlarged, and bone changes were present. Examination of the sella turcica, however, failed to show the elongation and enlargement that were found in cases of the full syndrome in which the skull was radiographed; nor did the lumbar vertebræ show the deformity (giving rise to kyphosis) that Ellis, Sheldon, and Capon observed in all their cases.

Though the further burdening of medicine with new names and syndromes is generally to be deplored, gargoylism has features at once so peculiar and so widespread as to deserve close attention. The unravelling of this pathological tangle might well help us to understand other congenital familial disorders of bone development.

HOSPITALS AS SOCIAL CAPITAL

FROM the patient's point of view a hospital is a place where [illegible] restored to health; from the doct[illegible]xercise of professional skill a[illegible]usion of knowledge. To t[illegible]yer, it appears in a [illegible]ment of capital in[illegible] objects. This a[illegible]d in America h[illegible]ublished in the v[illegible] studied by all w[illegible]n of hospital s[illegible]ulars of practi[illegible]l States, which nu[illegible]n investment of 600 [illegible]w manufacturing indust[illegible]rge a capital. Of this end[illegible]nt. is represented by hospitals pr[illegible]ntral or local government authorities, 45 per cent. by voluntary "non-profit" hospitals, and 9 per cent. by hospitals established for profit-making. Though the second group most nearly resembles British voluntary hospitals, there are important differences: the American voluntary hospital has far more pay-beds, and the rates payable are fixed beforehand, varying with the quality of accommodation provided. It might be expected that American hospital accounting would aim at relating these rates to costs, and would, for that if for no other purpose, show allowances for depreciation of buildings, plant, and equipment. This however is not so. It is exceptional for a hospital record to make any recognition of the services of capital by allowances for interest and depreciation. There appears to be need for more precise methods of cost analysis and for more uniformity in the keeping of hospital accounts. Without such methods, comparisons of the costs of different hospitals may become dangerously misleading. The capital invested in American hospitals increases by some 40 million pounds a year, chiefly in the extension and improvement of existing institutions. The question naturally arises whether the vast amounts invested are adequately utilised, and it appears that in many hospitals less than two-thirds of the beds are occupied on daily average during the year. This raises the further question whether the hospitals in each of the various areas should not be combined in some unified system of control. For the discussion of these and similar questions useful material will be found in Dr. Rorem's book. It does not, however, specifically discuss a question now agitating medical circles in America—whether the hospitals of the local authorities should be permitted to accept patients without regard to their financial responsibility. The movement in this direction will, it is feared, turn many private medical practitioners into salaried officers of lay authorities, and form a long step towards "State medicine." But in view of the growing need and increasing cost of hospital treatment some changes in hospital economics seem inevitable, and should be considered in the light of the facts so ably marshalled by Dr. Rorem.

[3] Hurler, G.: Zeits. f. Kinderheilk., 1919, xxiv., 220.
[4] De Lange, C., and Woltring, L.: Acta Prediat., 1936, xix., 71.
[5] The Public's Investment in Hospitals. By C. Rufus Rorem, Ph.D. Chicago: The University Press. 1936. Pp. 251. $2.50.

HEPARIN TRANSFUSIONS

A NOVEL suggestion for simplifying the technique of blood transfusion is made by Dr. Per Hedenius [1] who utilises the anticoagulant properties of heparin (a liver extract) in preparing the blood donor for the operation. He finds that an intravenous injection of heparin will lengthen the coagulation-time of the blood to 20 minutes or more, so that reasonable time is afforded for the performance of a transfusion in the ordinary way without the addition of any other anticoagulant to the blood, or the use of any special precautions. Hedenius gives details of eleven transfusions carried out in this way. The donor's coagulation-time was usually increased to 20 minutes or considerably more, while the effect on the patient of the small quantity of heparin in the transfused blood was always negligible. The blood is taken from the donor ten minutes after the injection of 150 mg. of heparin, and it is stated that the heparinisation is quite harmless. The method seems to demand further investigation, and if its harmlessness is confirmed it may be of wide application.

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FROM time to time clinicians, discouraged by the tardy results of orthodox methods of treating prostatitis, have attempted new procedures. One of these has been the injection of antiseptics into the substance of the prostate. O. Grant employed 1 per cent. mercurochrome injected directly into the lobes of the prostate through the perineum; he reported an amelioration of symptoms and a rapidity of cure not usually obtained otherwise. F. C. McCarthy prefers injection through a panendoscope of 3–8 per cent. colloidal silver. But on the whole the intraprostatic injection of antiseptics has not appealed to urologists. If injection of antiseptics into cavities has but a limited use, it is scarcely to be expected that infiltration of a solid organ like the prostate will materially benefit the patient, even if it can be assured that no damage is done to the tissues. The experiments of V. J. O'Conor and R. L. Ladd [2] of Chicago reinforce this argument. Removed 7–70 days after infiltration with mercurochrome and colloidal silver, the prostates of dogs showed a chronic inflammatory reaction, with scattered areas of

[1] Acta med. Scand., 1936, lxxxix., 263.
[2] Jour. Amer. Med. Assoc., Oct. 10th, 1936, p. 1185.

ANNOTATIONS

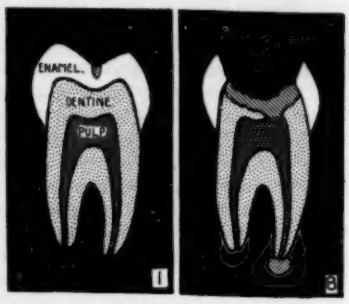
THE NORMAN LOCKYER LECTURE

In his lecture last week to the British Science Guild, which is now merged in the British Association, Lord Rutherford surveyed the great tide of advance in the physical sciences during the past forty years, paying high tribute to the inventive capacity of Dr. Gaede which has made it possible to produce a high degree of vacuum by simple mechanical methods. It was the production of high vacua by the mercury pump which led to the discovery of X rays and of cathode rays, and its further development has served the modern industry of electric light bulbs, wireless valves, and rectifiers. Lord Rutherford gave an example of what a good diffusion pump of the oil type will and will not do. Such a pump can reduce the pressure of gas in a vessel to about 10^{-11} atmospheres, but even at such a level of exhaustion the space is hardly beginning to be empty, for each cubic centimetre still contains about 270 million molecules. Nevertheless the molecules can move about with great freedom. At this pressure the mean free path of a molecule is something like 5 kilometres. This means that in a spherical vessel of (say) 100 c.cm. capacity the molecule of gas rebounds from the walls of the vessel about 100,000 times before it collides with any other molecule. Hence a stream of fast electrons or molecules can travel in straight lines through such a rarefied space with only very occasional collisions.

At the end of his lecture Lord Rutherford referred to the possible danger to the community of the unrestricted development of scientific invention. Taking a broad view he is satisfied that the progress of scientific knowledge has been overwhelmingly beneficial to mankind. But scientific men, he thinks, have shown themselves unduly sensitive to criticism. It has been suggested that they should be more active in controlling the wrong use of their discoveries, but except in rare cases Lord Rutherford doubts whether even the most imaginative scientific man is able to foresee the ultimate effect of any discovery. He does however suggest that some control of the rate of application of new ideas or inventions to industry may be desirable to prevent dislocation of capital or labour. It would be an advantage to the State to know the probable changes to be expected in industry before new inventions are put into operation; and for this reason he would like the Government to set up a "prevision committee" of an advisory nature which might graduate the rate of change and so prevent too serious dislocations in the social order. A competent committee of this kind might have foreseen the coming competition between motor and railway transport, and helped to adjust competing claims before the difficulties became acute.

DENTAL CARIES

Sir Francis Acland told the Dental Board at its meeting on Nov. 10th that well over a million copies of the leaflet entitled "The Story of a Tooth" had been asked for by local education authorities; and this was by no means the end, as something like half these authorities had not yet replied to the Board's offer. The excellent feature of this piece of propaganda is that it is incontrovertible; one might almost say both hors de combat and hors concours, for it is strictly outside the arena of conflict about the causation of dental caries. Whatever may be the relation of dental caries to diet or to the care of the mouth, there is no question about the merit of the Dutch boy who prevented the destruction of his country by stopping the first tiny hole in the dyke. The only claim made in "The Story of a Tooth" is as follows: "If boys and girls would let the dentist mend their teeth when the holes are tiny, the story would have been very different, and a lot of trouble would be saved." The narrative is well within the compass of the average boy or girl at school, and is illustrated by nine sections of teeth printed in six colours. Two of these pictures here reproduced on two-thirds of the actual scale give little idea of the effectiveness of the coloured series as it appears in the pamphlet. The idea came from Mr. B. R. Townend, senior dental officer of the West Riding of Yorkshire, who also largely assisted in working it out. The Board has already spent £1400 in producing the first million copies, and is proposing to spend further money on this form of dental health education. And this is well, because the evidence suggests that with existing propaganda it is not possible to achieve much more than what is now being done. Under present conditions the pre-school child is often only referred for dental treatment when the condition of its mouth is so bad as to be endangering its health and when there is nothing for it but to extract the teeth. The situation thus created is admittedly one of the most pressing hygienic problems of our time, for dental caries leads to oral sepsis and then to infected cervical glands and digestive disorders of various kinds. Whether sufficient provision is available or can be obtained for the children who need it may be in doubt, but any such provision is useless unless the danger of neglected teeth is sufficiently appreciated to secure the coöperation both of the parents and the children. For an effective piece of propaganda sincere thanks are due to the Dental Board and to Mr. Townend.



GARGOYLISM

Under this name was recently described [1] a syndrome characterised by a peculiarly grotesque heavy facies, corneal opacities, enlargement of the liver and spleen, mental deficiency, and chondro-osteo-dystrophy, the bone changes resembling more or less closely those seen in the condition described by Morquio and others and now generally known by that author's name. It is probable that Morquio's disease and gargoylism are closely connected, although the widespread nature of the abnormalities in the latter suggest a metabolic disorder—a suggestion supported by the discovery of changes resembling those of juvenile amaurotic idiocy in a case that came to autopsy.[2] Ellis, Sheldon, and Capon [1] reported 7 cases and reviewed 10 collected from the literature,

[1] Ellis, R. W. B., Sheldon, W., and Capon, N. B.: Quart. Jour. Med., 1936, v., 119.
[2] Tuthill, C. R.: Arch. Neurol. and Psych., 1934, xxxii., 198.

the first 2 having been described in 1929 by Hurler.[3] No doubt others have been recorded, and the fact that during the present year in this country another typical example, and a *forme fruste* in two brothers, have been shown before the Royal Society of Medicine indicates that the condition is less uncommon than might be supposed. Prof. Cornelia de Lange and Dr. Woltring [4] have now described a similar *forme fruste*, in which the corneal opacities were lacking, in two brothers. These boys showed the heavy features and large heads that had suggested the name of gargoylism, though the abnormality was less than in the fully developed syndrome. The mental development was retarded, the liver and spleen were enlarged, and bone changes were present. Examination of the sella turcica, however, failed to show the elongation and enlargement that were found in cases of the full syndrome in which the skull was radiographed; nor did the lumbar vertebræ show the deformity (giving rise to kyphosis) that Ellis, Sheldon, and Capon observed in all their cases.

Though the further burdening of medicine with new names and syndromes is generally to be deplored, gargoylism has features at once so peculiar and so widespread as to deserve close attention. The unravelling of this pathological tangle might well help us to understand other congenital familial disorders of bone development.

HOSPITALS AS SOCIAL CAPITAL

FROM the patient's point of view a hospital is a place where he hopes to be restored to health; from the doctor's, a place for the exercise of professional skill and the acquisition and extension of knowledge. To the business man and the taxpayer, it appears in a different aspect—as an embodiment of capital invested to secure important social objects. This aspect has been thoroughly examined in America by Dr. Rufus Rorem, whose results, published in the volume before us,[5] may profitably be studied by all who are concerned with the provision of hospital services. Dr. Rorem obtained particulars of practically all the hospitals in the United States, which number about 7000 and represent an investment of 600 million pounds. There are few manufacturing industries in America with so large a capital. Of this enormous sum, 46 per cent. is represented by hospitals provided by central or local government authorities, 45 per cent. by voluntary "non-profit" hospitals, and 9 per cent. by hospitals established for profit-making. Though the second group most nearly resembles British voluntary hospitals, there are important differences: the American voluntary hospital has far more pay-beds, and the rates payable are fixed beforehand, varying with the quality of accommodation provided. It might be expected that American hospital accounting would aim at relating these rates to costs, and would, for that if for no other purpose, show allowances for depreciation of buildings, plant, and equipment. This however is not so. It is exceptional for a hospital record to make any recognition of the services of capital by allowances for interest and depreciation. There appears to be need for more precise methods of cost analysis and for more uniformity in the keeping of hospital accounts. Without such methods, comparisons of the costs of different hospitals may become dangerously misleading. The capital invested in American hospitals increases by some 40 million pounds a year, chiefly in the extension and improvement of existing institutions. The question naturally arises whether the vast amounts invested are adequately utilised, and it appears that in many hospitals less than two-thirds of the beds are occupied on daily average during the year. This raises the further question whether the hospitals in each of the various areas should not be combined in some unified system of control. For the discussion of these and similar questions useful material will be found in Dr. Rorem's book. It does not, however, specifically discuss a question now agitating medical circles in America—whether the hospitals of the local authorities should be permitted to accept patients without regard to their financial responsibility. The movement in this direction will, it is feared, turn many private medical practitioners into salaried officers of lay authorities, and form a long step towards "State medicine." But in view of the growing need and increasing cost of hospital treatment some changes in hospital economics seem inevitable, and should be considered in the light of the facts so ably marshalled by Dr. Rorem.

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[3] Hurler, G.: Zeits. f. Kinderheilk., 1919, xxiv., 220.
[4] De Lange, C., and Woltring, L.: Acta Pædiat., 1936, xix., 71.
[5] The Public's Investment in Hospitals. By C. Rufus Rorem, Ph.D. Chicago: The University Press. 1936. Pp. 251. $2.50.

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UTERO-TUBAL INSUFFLATION

WHEN first introduced, Rubin's test for patency of the Fallopian tubes was thought to have no value beyond giving help in diagnosis. In 1923, however, Peterson and Cron pointed out that pregnancy sometimes followed the insufflation, and in 1929 Rubin was able to report a further 205 cases in which this had happened. Prof. Gordon King now demonstrates[1] that by adding a revolving drum to the apparatus a permanent record can be kept of the findings at the examination, and that such a record may provide important information. He reproduces tracings characteristic of those obtained with a normal patent Fallopian tube, with a tube that is undergoing muscular spasm, with a tube whose lumen is stenosed, and with a tube that is wholly occluded. The reason for making the investigation is the symptom of sterility, and Prof. King makes no claim that his method brings any greater therapeutic success, though pregnancy occurred within a few months of the insufflation in 11·6 per cent. of 300 cases in which patency was proved. It may be argued that the diagnostic information is equally easily—and more certainly—obtainable by injection of lipiodol or some similar substance; but Prof. King holds that the injection of lipiodol into the Fallopian tubes in cases of apparent sterility is not to be recommended. Rabbiner, Rubin, and others have drawn attention to the frequency with which this procedure is followed by salpingitis and even peritonitis, and Rubin has shown that in the normal Fallopian tube lipiodol produces a foreign-body reaction, so that the walls contain numerous foreign-body giant-cells. Lipiodol, according to King, is to be recommended only where obstruction is known to be present, and where it has to be localised before a decision is reached about the wisdom of an abdominal operation. He points out that insufflation with carbon dioxide, using the kymograph in addition, suffices to prove patency and non-patency and reveal the abnormalities specified above. The insufflation should be performed soon after menstruation has ceased, and it is recommended that no anæsthetic be employed. If it is [illegible] that insufflation without kymography is [illegible] since it supplies all the necessary infor[illegible] gives similar results as regards subseque[illegible] the answer is that the maximum amo[illegible] tion should be obtained from any exa[illegible] King has undoubtedly shown that [illegible] kymograph amplifies the informat[illegible] provides a permanent record.

ETHER CONVULSION

SEVERAL additions have lately bee[illegible] now considerable literature of ethe[illegible] Some of these give admirable summaries known of this disturbing phenomenon, bu[illegible] nately none of them brings us much nea[illegible] explanation of its origin. Mr. Vaughan Payne, indeed, gives up the attempt to pin down the symptom to any one cause and attributes it to the concurrence of several factors. He is able to show that there are a number of conditions which have been present in most of the recorded cases—namely, youth, sepsis, elevation of temperature, and deep anæsthesia. With regard to the last it is interesting to observe that another writer[2] evidently regards insufficient anæsthesia and the resulting trauma as a cause of convulsions. The explanation that seems to meet with most approval at the moment is that first advanced by Dickson Wright, who attributes the convulsions to heat-stroke. As long ago as 1928 Hadfield said that raised temperature was the only common factor he could detect in all recorded cases, and that most of them had been encountered at a warm period of the year. Nevertheless it does not seem likely that hyperthermia will prove to be the essential causative element. It has been well pointed out how many factors at a modern operation tend to heat conservation, but something more is needed to put heat-stroke in the place of chief cause. We are glad to know that a research is to be undertaken under the auspices of the Anæsthetics Committee of the Medical Research Council which should increase our exact knowledge regarding the temperatures of operating theatres and their inmates, and which may well enable us to value truly the theory that ether convulsions depend mainly on excessive heat. Deficiency of serum calcium has now been put forward[3] as an alternative, and although he admits that his sugges-

[1] Jour. Obst. and Gyn. Brit. Emp., October, 1936, p. 865.

[1] Payne, R. V.: Guy's Hosp. Rep., October, 1936, p. 461.
[2] Hudson, R. V.: Brit. Jour. Anæsth., 1936, xiii., 153.
[3] Hoseason, A. S.: Ibid., p. 142.

tion is supported so far by only two cases Dr. Hoseason has produced a thoughtful contribution to the subject.

INFLUENZA: THE RELATION OF ANTIBODIES TO IMMUNITY

In an appeal for fifty first-year St. Bart.'s students to volunteer help in the influenza research being carried on at the National Institute for Medical Research, Hampstead, Dr. C. H. Andrewes sets out succinctly the specific questions to which answers are required.[1] One is, whether the fact that to-day the antibodies to influenza of most Londoners appear to be of very inferior quality, or not detectable at all, means that an influenza epidemic is about to break out this winter. The potency of these antibodies is tested by dropping mixtures of serum from persons to be tested and filtrates of influenza virus into the noses of ferrets or mice; if antibodies are present in the serum the animal fails to develop the disease. Three years ago, says Dr. Andrewes, after a widespread epidemic, nearly all Londoners had antibodies to the virus in their blood; now those tested have only poor ones. Junior students, who will be available for a number of years to come, are being asked to give 5 c.cm. or 10 c.cm. of their blood so that its antibody content may be estimated now and in future years. It is hoped thus to learn whether such bloods will serve as a 'flu barometer—i.e., whether there is any relation between epidemics and the antibody level in a representative section of the community. If, again, there is an epidemic and those students with good antibodies escape while the others fall victims, it will encourage the hope that the increasing of antibodies by vaccination with the killed virus will increase resistance to influenza in humans as it has already been found to do in ferrets and mice. The incidence of influenza among these young volunteers will not be accepted without objective test, since it is fairly certain that several diseases are mixed up together under the name of influenza. They are asked to notify indisposition within 24 hours, when workers from Hampstead will swoop down upon them to collect their saline garglings for testing on ferrets.

This seems to us an excellent plan for testing the significance of the antibody level as regards immunity, and we wish it every success.

INTRACRANIAL INJURIES OF THE NEW-BORN

The general opinion of intracranial injuries of the new-born is that they are always serious and better fatal. But according to R. H. Nattrass[2] the commoner examples are usually unrecognised and thus untreated, so that the child survives subject to the risk of mental and physical impairment. From a study of the causes of intracranial injuries, Nattrass deduces that diagnosis is greatly helped by a detailed knowledge of the labour. The clinical signs and symptoms are neither uniform nor characteristic. Respiration, after being established with some difficulty, becomes slow and irregular. There may be focal or general convulsions, rigidity of the neck, inequality of pupils, and either extreme lethargy or great restlessness. The sucking reflex is often impaired or absent. Nattrass points out that the condition of the anterior fontanelle is often misleading, and he urges the use of lumbar puncture as a relatively easy method of establishing diagnosis as well as affording decompression. In discussing treatment he mentions, however, that the intracranial pressure may also be lowered by rectal injections of 2 oz. of 10 per cent. saline given every 4–8 hours until symptoms subside. Under the same heading, too, he shows that intracranial damage may be aggravated by the various vigorous methods still, unfortunately, being used for resuscitation. A newborn baby that fails to breathe when the mucus from the throat has been adequately removed—a measure followed perhaps by gentle traction of the tongue and the use of a stimulant drug such as Coramine—has probably sustained a brain injury, so that violent manipulative methods will certainly do harm. Warmth is important and the baby must be treated in a darkened room and not put to the breast until all apparent danger is over. Oxygen and carbon dioxide must be available for dealing with cyanotic attacks, and if slowly continuing hæmorrhage is suspected or occurs in association with the lumbar puncture, it is probably useful to inject about 10 c.cm. of maternal blood into the infant's buttocks in the hope of encouraging coagulation.

[1] St. Bartholomew's Hospital Journal, November, 1936, p. 26.
[2] Med. Jour. of Australia, Sept. 5th, 1936, p. 326.

URETERIC ENURESIS

Incontinence of urine caused by extravesical implantation of the lower end of one or two ureters is a rare condition, but as H. C. E. M. Houtappel[1] points out, is of practical importance, because it can usually be cured. Several different types of the anomaly have been reported. In one group of cases one or both of the normal ureters open extravesically. (The second of these types has so far been reported only as a post-mortem finding in newly born infants.) In another group an extra rudimentary kidney is present and the ureter from this opens outside the bladder; this is the type most often seen and includes the case on which Houtappel bases his paper. In a third group, of which only two post-mortem examples have been recorded, one of the normal kidneys is absent and its place is taken by a pair of rudimentary organs with ectopically opening ureters. In a fourth group an extra rudimentary kidney is present on each side and one or both of the extra ureters open extravesically. Lastly, one case has been described in which one kidney was replaced by a rudimentary kidney situated in the pelvis close to the bladder and with a ureter opening extravesically.

In Houtappel's case the patient, a single woman aged 24, had suffered all her life from dribbling of urine, which was constant and not influenced by coughing or laughing. Normal micturition occurred. Cystoscopy showed two normal ureteric orifices. On inspection of the vulva, urine was seen to exude slowly from the urethra. The bladder was filled up through a catheter with sterile milk and it was then observed that the drops emerging from the urethra remained clear and did not become milky in appearance, which showed that the fluid did not come from the bladder. Several abortive attempts were made to pass an opaque ureteric catheter into the abnormal ureter and at last a false passage was made into the vagina. This accident proved to be a fortunate one. It was followed by cessation of the extravesical oozing of urine and later by pain in the left loin, thus giving a clue to the position of the abnormal kidney. Operation was carried out and disclosed a miniature extra kidney lying at the upper pole of the normal organ. The extra kidney was removed after ligaturing its ureter. It was bean-shaped, 2·3 cm. long, and microscopically showed normal renal tissue.

Emphasising the importance of exact anatomical diagnosis Houtappel points out that this is much easier in the female than in the male. The nature of the operation will depend upon the condition found; various alternatives are open to the surgeon, including nephrectomy, ligature of the abnormal ureter, and implantation of the ectopic ureter into the bladder. Ureteric enuresis is a possibility to be borne in mind in obscure cases of urinary incontinence.

[1] Nederl. tijdschr. v. geneesk., 1936, lxxx., 4692.

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[1] Jour. Obst. and Gyn. Brit. Emp., October, 1936, p. 865.

ETHER CONVULSIONS

SEVERAL additions have lately been made to the now considerable literature of ether convulsions. Some of these give admirable summaries of what is known of this disturbing phenomenon, but unfortunately none of them brings us much nearer an explanation of its origin. Mr. Vaughan Payne,[1] indeed, gives up the attempt to pin down the symptom to any one cause and attributes it to the concurrence of several factors. He is able to show that there are a number of conditions which have been present in most of the recorded cases—namely, youth, sepsis, elevation of temperature, and deep anæsthesia. With regard to the last it is interesting to observe that another writer [2] evidently regards insufficient anæsthesia and the resulting trauma as a cause of convulsions. The explanation that seems to meet with most approval at the moment is that first advanced by Dickson Wright, who attributes the convulsions to heat-stroke. As long ago as 1928 Hadfield said that raised temperature was the only common factor he could detect in all recorded cases, and that most of them had been encountered at a warm period of the year. Nevertheless it does not seem likely that hyperthermia will prove to be the essential causative element. It has been well pointed out how many factors at a modern operation tend to heat conservation, but something more is needed to put heat-stroke in the place of chief cause. We are glad to know that a research is to be undertaken under the auspices of the Anæsthetics Committee of the Medical Research Council which should increase our exact knowledge regarding the temperatures of operating theatres and their inmates, and which may well enable us to value truly the theory that ether convulsions depend mainly on excessive heat. Deficiency of serum calcium has now been put forward [3] as an alternative, and although he admits that his sugges-

[1] Payne, R. V.: Guy's Hosp. Rep., October, 1936, p. 461.
[2] Hudson, R. V.: Brit. Jour. Anæsth., 1936, xiii., 153.
[3] Hoseason, A. S.: Ibid., p. 142.

tion is supported so far by only two cases Dr. Hoseason has produced a thoughtful contribution to the subject.

INFLUENZA: THE RELATION OF ANTIBODIES TO IMMUNITY

In an appeal for fifty first-year St. Bart.'s students to volunteer help in the influenza research being carried on at the National Institute for Medical Research, Hampstead, Dr. C. H. Andrewes sets out succinctly the specific questions to which answers are required.[1] One is, whether the fact that to-day the antibodies to influenza of most Londoners appear to be of very inferior quality, or not detectable at all, means that an influenza epidemic is about to break out this winter. The potency of these antibodies is tested by dropping mixtures of serum from persons to be tested and filtrates of influenza virus into the noses of ferrets or mice; if antibodies are present in the serum the animal fails to develop the disease. Three years ago, says Dr. Andrewes, after a widespread epidemic, nearly all Londoners had antibodies to the virus in their blood; now those tested have only poor ones. Junior students, who will be available for a number of years to come, are being asked to give 5 c.cm. or 10 c.cm. of their blood so that its antibody content may be estimated now and in future years. It is hoped thus to learn whether such bloods will serve as a 'flu barometer—i.e., whether there is any relation between epidemics and the antibody level in a representative section of the community. If, again, there is an epidemic and those students with good antibodies escape while the others fall victims, it will encourage the hope that the increasing of antibodies by vaccination with the killed virus will increase resistance to influenza in humans as it has already been found to do in ferrets and mice. The incidence of influenza among these young volunteers will not be accepted without objective test, since it is fairly certain that several diseases are mixed up together under the name of influenza. They are asked to notify indisposition within 24 hours, when workers from Hampstead will swoop down upon them to collect their saline garglings for testing on ferrets.

This seems to us an excellent plan for testing the significance of the antibody level as regards immunity, and we wish it every success.

INTRACRANIAL INJURIES OF THE NEW-BORN

The general opinion of intracranial injuries of the new-born is that they are always serious and better fatal. But according to R. H. Nattrass[2] the commoner examples are usually unrecognised and thus untreated, so that the child survives subject to the risk of mental and physical impairment. From a study of the causes of intracranial injuries, Nattrass deduces that diagnosis is greatly helped by a detailed knowledge of the labour. The clinical signs and symptoms are neither uniform nor characteristic. Respiration, after being established with some difficulty, becomes slow and irregular. There may be focal or general convulsions, rigidity of the neck, inequality of pupils, and either extreme lethargy or great restlessness. The sucking reflex is often impaired or absent. Nattrass points out that the condition of the anterior fontanelle is often misleading, and he urges the use of lumbar puncture as a relatively easy method of establishing diagnosis as well as affording decompression. In discussing treatment he mentions, however, that the intracranial pressure may also be lowered by rectal injections of 2 oz. of 10 per cent. saline given every 4–8 hours until symptoms subside. Under the same heading, too, he shows that intracranial damage may be aggravated by the various vigorous methods still, unfortunately, being used for resuscitation. A newborn baby that fails to breathe when the mucus from the throat has been adequately removed—a measure followed perhaps by gentle traction of the tongue and the use of a stimulant drug such as Coramine—has probably sustained a brain injury, so that violent manipulative methods will certainly do harm. Warmth is important and the baby must be treated in a darkened room and not put to the breast until all apparent danger is over. Oxygen and carbon dioxide must be available for dealing with cyanotic attacks, and if slowly continuing hæmorrhage is suspected or occurs in association with the lumbar puncture, it is probably useful to inject about 10 c.cm. of maternal blood into the infant's buttocks in the hope of encouraging coagulation.

[1] St. Bartholomew's Hospital Journal, November, 1936, p. 26.
[2] Med. Jour. of Australia, Sept. 5th, 1936, p. 326.

URETERIC ENURESIS

Incontinence of urine caused by extravesical implantation of the lower end of one or two ureters is a rare condition, but as H. C. E. M. Houtappel[1] points out, is of practical importance, because it can usually be cured. Several different types of the anomaly have been reported. In one group of cases one or both of the normal ureters open extravesically. (The second of these types has so far been reported only as a post-mortem finding in newly born infants.) In another group an extra rudimentary kidney is present and the ureter from this opens outside the bladder; this is the type most often seen and includes the case on which Houtappel bases his paper. In a third group, of which only two post-mortem examples have been recorded, one of the normal kidneys is absent and its place is taken by a pair of rudimentary organs with ectopically opening ureters. In a fourth group an extra rudimentary kidney is present on each side and one or both of the extra ureters open extravesically. Lastly, one case has been described in which one kidney was replaced by a rudimentary kidney situated in the pelvis close to the bladder and with a ureter opening extravesically.

In Houtappel's case the patient, a single woman aged 24, had suffered all her life from dribbling of urine, which was constant and not influenced by coughing or laughing. Normal micturition occurred. Cystoscopy showed two normal ureteric orifices. On inspection of the vulva, urine was seen to exude slowly from the urethra. The bladder was filled up through a catheter with sterile milk and it was then observed that the drops emerging from the urethra remained clear and did not become milky in appearance, which showed that the fluid did not come from the bladder. Several abortive attempts were made to pass an opaque ureteric catheter into the abnormal ureter and at last a false passage was made into the vagina. This accident proved to be a fortunate one. It was followed by cessation of the extravesical oozing of urine and later by pain in the left loin, thus giving a clue to the position of the abnormal kidney. Operation was carried out and disclosed a miniature extra kidney lying at the upper pole of the normal organ. The extra kidney was removed after ligaturing its ureter. It was bean-shaped, 2·3 cm. long, and microscopically showed normal renal tissue.

Emphasising the importance of exact anatomical diagnosis Houtappel points out that this is much easier in the female than in the male. The nature of the operation will depend upon the condition found; various alternatives are open to the surgeon, including nephrectomy, ligature of the abnormal ureter, and implantation of the ectopic ureter into the bladder. Ureteric enuresis is a possibility to be borne in mind in obscure cases of urinary incontinence.

[1] Nederl. tijdschr. v. geneesk., 1936, lxxx., 4692.

PROGNOSIS

A Series of Signed Articles contributed by invitation

CXXI.—PROGNOSIS IN BREECH PRESENTATION

PROGNOSIS in breech presentation involves three distinct considerations: (1) the fœtus, (2) the mother, (3) the mother and fœtus when prophylactic external version is carried out.

Prognosis for the Fœtus

Some years ago Mr. G. F. Gibberd (Brit. Med. Jour., 1931, ii., 369) drew attention to a disquieting fact. He analysed the statistics of eight teaching hospitals, four in London and four in the provinces, and showed that the fœtal mortality recorded in breech deliveries was greatly in excess of the figure usually associated with that mode of delivery. When neonatal deaths were added to the stillbirths, no less than 32 per cent. of the fœtuses were found to have died in the "uncomplicated cases," while in the "complicated cases" the mortality-rate reached the astonishing figure of 52 per cent.

Gibberd pointed out that the danger of breech delivery to the fœtus has been considerably obscured by the custom of classifying the primigravid case and cases associated with extension of arms or legs as "complicated breeches." These circumstances

TABLE I

Gross Fœtal and Neonatal Death-rates in Breech Delivery

—	Total number of cases.		Stillbirths per cent.		Neonatal deaths per cent.	
	Pr.	Mul.	Pr.	Mul.	Pr.	Mul.
"Uncomplicated" breech	48	161	28	20	2	2
"Complicated" breech	7	43	57	56	14	2
Twins	3	76	33	9	Nil.	3

After Gibberd. Pr. = primiparæ; Mul. = multiparæ.

are the inevitable accompaniment of a considerable proportion of breech deliveries and cannot be used as an excuse for the birth of a dead child. The term "complicated breech" ought to be restricted to cases in which a second distinct obstetrical abnormality is present, such as, for example, placenta prævia or hydrocephalus. When this was done, Gibberd found that the mortality in one of the teaching hospitals, whose results had already been analysed, was as shown in Table I.

By further analysing his figures, and by eliminating from the above Table cases in which the fœtus had

TABLE II

Percentage of Stillbirths (Fœtus Fresh) in Breech Delivery

—	Primiparæ.	Multiparæ.
"Uncomplicated" breech ..	28	15
"Complicated" ,, ..	57	49
Twins	33	9

After Gibberd.

died *before* delivery and disregarding neonatal deaths which in some cases may have been due to prematurity, he found that the *minimum* fœtal risk associated with mechanical difficulties of breech delivery was as given in Table II.

It should be realised that the figures in this Table err by being over-corrected, and the real difficulty of breech delivery is probably slightly minimised. To many it will appear that this mortality-rate is still deplorably high, but figures are stubborn things, and statistics are as we find them and not as we would like them to be. Most of us would admit that the conduct of a "simple" breech case is, on occasion, a humiliating obstetrical experience.

Breech delivery does not, however, necessarily carry with it so grave a danger to the fœtus as has been indicated. Individual workers may be able to produce records to show that in their hands the fœtal mortality—although still high, and exceeding by some margin the 6 or 8 per cent. associated with forceps delivery—is yet considerably lower than the figure already mentioned. This fact deserves to be emphasised, for it means that the personal experience of the obstetrician is the most important single factor in determining the safety or otherwise of a breech delivery. It can only be supposed that the less good results already mentioned are due in the main to the relative inexperience of the junior officers who deliver cases in teaching hospitals. Yet these officers, although junior in rank, are by no means completely lacking in practical experience. They are, moreover, men who by the fact of their candidature for the post have shown that they are keen on midwifery, and presumably better versed in the theoretical side of the work than the average graduate who passes into general practice. Again, these men are able to deal with their cases in ideal surroundings, with the help of an anæsthetist, with experienced nurses at hand, and with all the resources of a modern hospital at their call. In spite of these advantages, breech delivery is such a serious matter for the fœtus that even in uncomplicated cases, more than one life is lost in every four in the primiparous group, and more than one life in every seven in the multiparous group.

It is difficult to get comparable statistics for domiciliary midwifery as carried out in general practice, but probably the results are not substantially different from those quoted. The good results obtained by the experienced few are offset by the poorer results of the relatively inexperienced majority. This will be better realised if it is remembered that breech delivery accounts for only 3 per cent. of all deliveries, and that a practitioner attending, say, 40 confinements a year, would require to be in practice for 15 years before he could have experience of even 20 cases.

It is interesting to compare the fœtal mortality-rate of breech with vertex delivery. A study of the annual reports of one of the institutions already mentioned shows that the gross fœtal mortality-rate in vertex delivery is below 5 per cent., this figure including neonatal deaths. In the same institution, the fœtal mortality in breech delivery, even when cases are excluded in which death was due to complicating conditions, is around 20 per cent. It can therefore be said that a fœtus which presents and is delivered by the breech is subjected to a risk of death which at a conservative estimate is at least four times that of vertex delivery. If primiparous cases alone are considered, or if "complicated" cases are included, the risk is considerably greater.

ANTENATAL EXAMINATION

Before discussing in detail the obstetrical difficulties peculiar to breech delivery, it may be well to point out that if in the last four weeks of pregnancy a fœtus is found to present by the breech, this fact alone indicates a strong possibility of an underlying maternal or fœtal abnormality. Among the various possibilities the following may be specially mentioned: multiple pregnancy, contracted pelvis, placenta prævia, hydrocephalus, and fœtal monstrosity. It is thus obvious that when dealing with uncorrected statistics the high incidence of obstetrical abnormalities in the one group inevitably loads the risk to both mother and the fœtus. In particular, the frequent coincidence of slight degrees of disproportion between the pelvis and fœtal head must be emphasised, for this makes safe delivery an extremely difficult matter. The most difficult of all breech deliveries are those in which the obstetrician unwittingly finds himself committed to the delivery of a shoulder-girdle and after-coming head which are relatively over-large for the pelvis through which they have to pass. While the fore-coming head may, in similar circumstances, be gradually moulded by the uterine forces and the minor degrees of disproportion thus safely overcome, the after-coming head is deprived of this advantage and can only be delivered by violent compression and with consequent intracranial damage. Nor can the obstetrician intelligently assess beforehand the degree of disproportion or forecast the obstetrical difficulties, for he is denied the opportunity of gauging the head directly against the pelvic brim. Barbour's dictum, "the fœtal head is the best pelvimeter," well and truly applies to the vertex case, but is meaningless when applied to a case in which the fœtus presents by the breech. The newer work on X ray cephalometry and pelvimetry, while giving some aid, has not yet materially altered the situation.

Notwithstanding the special difficulties just mentioned, one can still say with confidence that the prognosis in breech presentation is considerably influenced by competent antenatal examination. This examination, while not always successful in distinguishing the difficult case, will often show the presence of a coincident obstetrical abnormality. Forewarned is forearmed, and by appropriate measures many of these dangers may be avoided.

CAUSE OF FŒTAL DEATH

It was formerly believed that the usual cause of fœtal death in breech delivery was asphyxia produced by pressure on the umbilical cord during the delivery of the shoulders and the after-coming head. In consequence, it was generally taught that, to secure a live baby, the after-coming head had to be extracted as speedily as possible, and certainly within five minutes of the appearance of the umbilicus at the vulva. It is now known that this teaching is largely erroneous. Researches carried out by Eardley Holland, F. J. Browne, and others have shown that the most frequent single cause of death in breech delivery is intracranial hæmorrhage due to tentorial tear; these tears are the result of sudden excessive pressure on the after-coming head, and may be aptly described as the snapping of the internal "guy-ropes" of the cranium. Asphyxia, although still an important cause of death, is much less frequent than was previously supposed. Rupture of, or hæmorrhage into, the abdominal organs (caused by rough handling), or hæmorrhage round the spinal medulla (caused by undue traction in the trunk) are rarer causes of death.

Realisation of these facts has profoundly altered the teaching regarding the technique of breech delivery. Stress is no longer put on *speed*, but rather on gentleness and deliberation, especially during the delivery of the after-coming head.

It is surprising how long a newly born infant will live without a supply of oxygen. The apnœic baby seen after morphine-hyoscine narcosis may not breathe for ten minutes or more, and yet recover completely. Another example of resistance to anoxæmia is the successful delivery of a living fœtus by post-mortem Cæsarean section. In one instance known to me an operation performed at least 15 minutes after the mother's death resulted in the delivery of a healthy baby. Thus the anoxæmia suffered by the fœtus during breech delivery is seldom of sufficient duration to give rise to real anxiety. For similar reasons, needless anxiety is caused by attempts to feel and to count the pulsations of the fœtal cord. The pulsations are always slow, but the sudden realisation of this fact may unnecessarily disturb the attendant and may cause him to abandon his methodical step-by-step assistance of the delivery and tempt him to indulge in powerful traction and in brutal suprapubic pressure. In this connexion it is interesting to find that I. W. Potter, of Buffalo, who is famous in the obstetrical world as the man who delivers *every* fœtus by the breech (excluding the considerable proportion he delivers by Cæsarean section), takes what appears to onlookers to be an almost perverse delight in protracting the delivery of the after-coming head. Yet in his hands—and he has experience of nearly 20,000 cases—a stillborn baby is an extremely rare occurrence.

TECHNIQUE OF DELIVERY

Several points in the technique of breech delivery have an important bearing on prognosis.

(*a*) *Stage of Dilatation.*—The ease or otherwise of the critical stage of a breech delivery—namely, the delivery of the arms and after-coming head—is in a large measure determined by the degree of dilatation of the birth canal. Maximum dilatation is brought about by allowing ample time for the breech, with folded or extended legs, to dilate the cervix, vagina, and pelvic floor. This means a protracted labour, but it is better to follow the "hands-off-the-breech" rule than to attempt to hurry matters by pulling one or both legs down to the vulva at an early stage of dilatation. It is true that in a few cases extended legs may cause impaction, but this complication can be dealt with if and when it arises, and the possibility of its recurrence should not be used as an argument for routine interference.

(*b*) *The After-coming Head.*—Most obstetricians have a preference for the Mauriceau, or, as it is also called, the Smellie-Veit method of delivering the after-coming head. It should be realised, however, that in many cases it is necessary to allow the head to descend well through the brim in the *transverse* diameter before attempting to bring the occiput to the front. The head should then be manœuvred with traction directed well downwards (the patient being in the lithotomy position) until the base of the occiput coincides with the lower margin of the symphysis pubis. Col. A. Buchanan, in his booklet on "Midwifery Mechanics," aptly describes this as bringing the "pivot-points" together. It is an essential preliminary to extraction, and enables the head to be revolved on its fulcrum out of the pelvis. Recently, the Liverpool school has advocated allowing the fœtus to *hang* for a minute or two after the

arms have been delivered. This is merely another method of attaining the same preliminary essential of bringing the "pivot-points" together. When difficulty is experienced with the extraction of the head, and it is felt that considerable force must be used, the application of forceps is of considerable help, and will on occasion save a fœtal life.

(c) *Episiotomy.*—The advantage of making a generous episiotomy in every primiparous breech case cannot be stressed too strongly. The incision is best made when the perineum is beginning to distend, and can with advantage be preceded by a manual dilatation of the vaginal introitus and pelvic floor. Such an episiotomy greatly facilitates the passage of the arms and the after-coming head, and allows delivery to be accomplished with less mechanical stress to the fœtus and with less risk of asphyxia due to prolonged manœuvring. There is little doubt that were this practice made a routine in every primiparous case (excepting, of course, cases in which the fœtus is obviously less than normal size), there would be an appreciable saving of fœtal and neonatal life. There are also good reasons why an episiotomy should be made for the mother's sake: these will be dealt with later.

NON-FATAL FŒTAL INJURIES

Apart from the injuries mentioned, there are other risks to which the fœtus is subjected by breech delivery.

Fracture of the humerus is a not uncommon injury, and is the result of levering down an extended arm instead of pushing it down by pressure on the elbow. To reach the elbow it is necessary to pass the fingers high in the vagina; then, by gentle manipulation and by slight rotation of the fœtal trunk, it is usually possible, although not always easy, to sweep the arm down alongside the fœtal face. A fractured humerus is best treated by extension on a miniature Thomas's splint. Simple strapping to the chest wall will, however, usually give quite good results.

Fracture of the femur is a rarer form of injury which is caused by faulty methods of pulling down an extended leg—an operation not very often necessary, and one which should only be done under full surgical anæsthesia, and with the breech dislodged out of the pelvic cavity as an essential preliminary step. Treatment is more difficult than in the case of the fractured humerus, but strapping the leg in the extended position to the trunk for ten days gives results at least as good as other more elaborate methods of treatment. In both varieties of fracture it is remarkable how deformity is effaced by the lapse of time. This is a comforting thought, for often the immediate result is far from gratifying.

Separation of the epiphysis of the long bones is probably a fairly common injury; X ray examination may be of help in diagnosis, and treatment is on the lines already indicated for fractured limbs. *Erb's palsy* is occasionally simulated by an injury of the humerus or shoulder-joint. True Erb's palsy (caused by over-strong neck traction) has a grave prognosis. The wrist-drop should be corrected by a light support. Occasionally the paralysis is the result of bruising and will clear up in a week or two, but, if this does not happen, the likelihood of the disability being permanent is very great.

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(To be concluded)

SPECIAL ARTICLES

THE REGISTRAR-GENERAL'S REVIEW

UNHEEDED STUDIES OF VITAL STATISTICS

SINCE 1921 the Statistical Review of the Registrar-General of England and Wales has been issued in three sections. Part I. is composed of the medical tables for the year in question and gives in great detail the basic data derived from the certificates of death—the registered causes of death with their local, age, and seasonal distribution—together with information on other vital statistical indices such as stillbirths, cases of notifiable diseases, and the estimated populations of the administrative areas of the country. Part II. comprises the civil tables dealing with such matters as the marriage- and birth-rates from various aspects, migration to and from the country, and statistics of parliamentary and local government electors throughout the country. Finally comes the Text in which a considerable analysis is made of the material in Parts I. and II.

The procedure has very obvious advantages. It enables members of the public interested in one aspect of our vital statistics to buy a single section dealing with what concerns them rather than a volume containing much material that they do not want. Secondly the data to be tabulated are very extensive and the present format allows them to be issued with the least possible delay—the medical tables for 1935 have been issued this week.[1] If the text were to accompany the tables delay would be inevitable with disadvantages to workers in medical statistics. There seems to be only one drawback, though this is much more apparent than real. The analysis of the data to be included in the text naturally takes much time, especially as the Registrar-General wisely takes the view that the text is the proper place for what may be called long-term studies, or reviews of the national statistics, and special studies of selected vital statistical problems. It is clearly an advantage that the statisticians most closely concerned with the collection and tabulation of the original material should be afforded that opportunity of working upon it. But it has the result that when the text is issued—that relating to 1934 [2] has also been published this week—it appears to be out of date and to the uninitiated perhaps not worthy of notice. That is a mistaken view. It is true that the text contains a number of very useful standardised tables of death-rates which we should all desire to have as early as possible (mainly to save having to make the calculations ourselves from the previously published medical tables), but it also contains, as pointed out above, statistical studies of permanent value which cannot be hastened, and the importance of which, indeed, is not affected at all by the date of publication. For instance in the present text volume a comparison is made between the mortality in the county boroughs and the administrative counties in 1931–34, and that experi-

[1] The Registrar-General's Statistical Review of England and Wales for the year 1935. (New Annual Series No. 15.) Tables. Part I., Medical. H.M. Stationery Office. 1936. 6s.

[2] The Registrar-General's Statistical Review of England and Wales for the year 1934. Text. H.M. Stationery Office. 3s. 6d.

enced twenty years earlier, in 1911–14. In 1911–14 the standardised mortality in the 83 towns now classed as county boroughs ranged from 74 to 150 per cent. of the national mortality. By 1921–24 the range had contracted to 83–140, by 1931–34 still further to 87–137.

This narrowing of the range must, it is suggested, be attributed in the main to the effects of public hygiene and amelioration of the conditions of life in the towns where mortality was worst in the pre-war years. Fifty-four towns had then rates of 14 per 1000 or more and only one gave a rate below 10; in 1931–34 not one had an average rate as high as 14 and more than one-third of them gave rates below 10. One result of this favourable course of mortality in the large towns is to be seen in the diminishing, though still large, contrast between town and county.

The scale of the difference may be illustrated from the 1935 tables. In that year the mortality (standardised) in the county boroughs was 13 per cent. above the national rate, of the rural districts 9 per cent. below. The unenviable distinction of having the highest death-rate of the year appears to have been shared in the large areas between the county boroughs of Oldham, Wigan, and Merthyr Tydfil, with rates some 40 per cent. above the national rate.

In the country as a whole the death-rates in 1935, of both sexes combined, are lower than any previously registered at all ages and in every age-group up to 75 years, while the infant mortality-rate of 57 deaths per 1000 live births is also a new record. Tuberculosis mortality continues to decline and respiratory mortality in general was low. The year was an extremely favourable one for certain of the epidemic diseases, notably measles and whooping-cough. Scarlet fever after its rise in 1933–34 fell back to its previous level, but mortality from diphtheria remained relatively high.

A comparison, in the text volume for 1934, of mortality at various ages in England and Wales and a number of other countries shows, however, that though we well may congratulate ourselves on the trend of the various death-rates there is ample scope for further improvement. At ages 1–4 the Norwegian rates are in recent years less than half those of this country and the Swedish rates are little more than half. These facts go to support the conclusion reached from recent studies of the association between mortality at this age and overcrowding, that reduction of the mortality of young children is still possible through the mitigation of environmental evils. Within our own borders the infant mortality-rate varied in 1935 between over 80, or even 90, per 1000 live births in the worst of the county boroughs and under 40 in the rural districts of some of the southern counties. The much lower mortality levels at ages 65–74 in the Scandinavian countries also throw doubts on the prevalent belief that little or no improvement in death-rates at ages over 65 can be hoped for. Even if the comparison be limited to our rural districts Norway and Sweden still hold a considerable advantage at these older ages.

One of the serious causes of mortality at such ages is, of course, cancer, and twenty-three pages of the text are devoted to considering the 63,263 deaths ascribed to it in 1934 and to comparisons of the present incidence with the past. In particular the deaths from cancer of various sites at different ages in 1933–34 are compared with the numbers expected had the mean rates during 1911–20 been operative. There is some evidence of delayed mortality in recent years, notably of the tongue, mouth, and œsophagus in males and of the stomach and rectum in females, and for rodent ulcer in each sex. The mean age at death from cancer as a whole has increased since 1911–20 by one year in excess of that which can be accounted for by the increasing average age of the population, but for certain organs, such as the tongue, it has advanced by as much as 4 years. With some sites it is probable that those affected are living longer, through earlier resort to treatment or more efficient treatment, in sufficient numbers to influence the national statistics; in other sites changes in diagnosis or certification especially at the most advanced ages may well play a part. The standardised death-rates of 1935 show a small increase over recent years for males and a small decrease for females.

The 1934 report contains a short but interesting study of maternal mortality according to the social class of the husband. The mortality per 1000 live births is shown to decline from 4·44 in the professional group to 4·11 in the skilled-workman class, 4·16 in the semi-skilled, and 3·89 in the unskilled. Puerperal sepsis risks diminish progressively in passing down the scale but puerperal hæmorrhage risks increase. The rate for puerperal albuminuria, convulsions, and other toxæmias is lowest for the unskilled class. It must, of course, be remembered that the mortality risk from at least some causes is higher at a first pregnancy than at later pregnancies, or may be otherwise influenced by the number of previous confinements, and the average size of family is not the same for married women in the different social classes. In a class where a higher proportion of the confinements are first pregnancies, the average mortality risk may be greater on that account, and the excess of mortality-rate in the professional classes may arise partly from that cause. The number of factors involved makes it difficult to get a clear-cut comparison, a point which must be remembered when differences in such things as nutrition or medical care are being implicated.

These special studies of the national statistics were, of course, initiated by William Farr, the first medical officer to the Registrar-General, and have been carried on by his successors to the present day. In considering some cause of death as a suitable subject for investigation or some aspect of our vital statistics, the first reaction of the medical statistician is to "see what the R.G. has said about it." It would be well if all workers who are seized with a desire to use mortality statistics, or who have them reluctantly thrust upon them, would acquire that habit. Because these studies appear in a "blue book" they are not one whit less important than if they had had the wider publicity of a scientific journal; they are more likely to be overlooked, and, at the moment, perhaps, to be overshadowed by the more recent national statistics issued alongside them.

MEDICINE AND THE LAW

"Klieg-eye" in Film Work[1]

THE action brought by Miss Peggy Crawford (Mrs. Florence Russell) against Criterion Film Productions Ltd. has shown that, in the opinion of the judge who tried the case, the performers in film studios are unaware of the effect of the bright lighting upon the eyes. The plaintiff complained that the use of lighting of supranormal power and intensity in the photography of a ball-room scene caused her to become temporarily blind, impaired her eyesight, and injured her shoulders. The judge thought she exaggerated her sufferings but he substantially

[1] The name "Klieg-eye" is derived from Kliegal, the name of a manufacturer of powerful electric lamps.

believed her story and awarded her £126 19s. damages. It was said to be the first case of its kind and part of the evidence was devoted to the effect of the ultra-violet and infra-red rays employed by the photographers. The defendants pleaded that the lighting was normal and no more dangerous than the usual lighting used in film studios. Alternatively they relied on the maxim *volenti non fit injuria*, contending that the film actress knew of the risk (if any) and voluntarily undertook it. There was a further plea of contributory negligence and a suggestion that she could have left the scene when she felt pain in her eyes. Lastly they put the blame on their photographer and said he was not their servant or agent but an independent party responsible for his own skill or negligence. Miss Crawford replied by suing the photographer as well. She said also that if there was a risk of the condition described as "Klieg-eye," she was not aware of it when she signed her contract to perform in the film. The defendants then rejoined that she and the photographer were legally fellow-servants and that her claim was therefore barred by the English common-law doctrine of common employment. These legal skirmishings explain how the judge came to consider the extent of the knowledge of the risk to performers' eyesight. Two witnesses called by the film company said that no injury to eyesight was possible since the ultra-violet rays could not penetrate the glass screens placed in front of the lamps. The court found that injury had in fact been caused to the plaintiff and to others. Expert knowledge of the method by which ultra-violet or infra-red rays affected the eyes was, in the judge's opinion, not widely spread. A third witness called by the defendants disagreed with the earlier contentions of the defence. Glass, he said, whether placed at the back or at the front of an arc-lamp, would not shut out by any means all the ultra-violet or infra-red rays. Accepting this frank opinion, the judge held that the plaintiff was injured by burning from these rays, that the burning was due to the ordinary effect of extremely powerful lighting such as was used from time to time in ball-room scenes, that the direct physical effect lasted for a month, and that the plaintiff was justified in avoiding the bright light of film work till the end of the year from fear of recurrence. The court said the lighting was not supranormal but it was of an intensity not often used. The film company knew its dangers and its possible effect on the eyes. They wanted to make a good picture and they were prepared to risk the performers' eyes in getting that result. Some of the plaintiff's witnesses knew the risk and had suffered from the rays. It was the defendants' case that "Klieg-eye" was a well-known risk. The judge thought that "crowd" performers were unaware of it and that the plaintiff herself did not know of it, the result being that for about a week she genuinely feared she was going blind.

A Non-existent Risk of Practice

A continental contemporary (Münch. med. Woch., Nov. 6th) mentions an occasion when an English doctor was accused by the family of one his patients of having incited him to suicide. The patient suffered from cancer and the doctor thought he should leave him in no doubt that he regarded his condition as hopeless. The patient then shot himself for fear of worse pain to come. The court acquitted the doctor on the grounds that he had not only the right but the duty of candour to his patient and no one could be reproached if the patient took refuge from pain in suicide. This was proved by a letter of thanks left by the patient for the doctor.

The reference is a little puzzling. A man may certainly be indicted in an English court for the offence of inciting to suicide; but, if the sole incitement were the perfectly lawful action of telling the patient the truth, it is doubtful whether the prosecution would ever get as far as commitment by the investigating magistrates. It may be that the report refers to cross-examination or comment in the coroner's court where all things are possible. To frighten a person to death (by assault or otherwise) is said to be manslaughter at least. If A, under a reasonable apprehension of personal violence, jumps out of a window or into a river, the threatener of violence is criminally liable. Unless, however, the act be wrongful in its origin, there will be no criminal responsibility for the consequences. In the field of civil liability, too, physical shock may give rise to a claim for damages. There is a well-known decision in a case where a mother died from shock at seeing a motor accident which threatened her child. This introduces a train of forensic speculation as to whether the consequences of an act are legally too remote to justify a successful claim for damages or whether they are such as a reasonable man might have been expected to foresee. If the defendant has been at fault, he cannot claim that the mother's feelings were too easily roused. It is no answer to a claim for damages for negligence to say that the injured person would have suffered less injury or no injury at all if he had not had an unusually thin skull or an unusually weak heart.

So, too, if a doctor were to cause a patient shock by a too abrupt statement about his health, it might be no answer to say that the patient was unduly sensitive. But this situation can hardly create civil or criminal liability for the doctor, since there is nothing unlawful in what he is doing. The mother, in the case already mentioned, has no legal claim unless the motorist has been negligent or has infringed some legal duty not to inflict physical shock. The doctor, in telling a patient the truth about his health, is lawfully doing that which the patient requires of him; a failure of tact will not make the lawful act unlawful. Doctors may sometimes be anxious over the effect of the truth upon the patient; but they need not worry about a possible charge of incitement to suicide.

MEMORIAL TO SIR WALTER FLETCHER

THE library at the National Institute for Medical Research was crowded on Wednesday afternoon, Nov. 11th, when the portrait-bust of Sir Walter Morley Fletcher was officially presented to the care of the institute.

Lord BALFOUR OF BURLEIGH, the new chairman of the Medical Research Council, said that it was a high privilege to preside over a gathering of friends of Walter Fletcher, and it was a special pleasure that this should be almost the first duty which had fallen to him in his new office. All Fletcher's friends would remember the enthusiasm with which he would talk of his work as secretary of the Council: he was able to make his "shop" interesting even to the layman. He thought that the date for their gathering, the great national day of remembrance, had been well chosen, and that here was the right place for a memorial to the man who had done so

much to make the work of the Medical Research Council a force in the land.

Prof. G. M. TREVELYAN, regius professor of modern history at Cambridge, said that Miss Dora Clarke's sculptured portrait of their friend recalled his features in a very exact and vivid manner, it was a true portrait.[1] They were met to record their gratitude for what Walter Fletcher did, and their affectionate remembrance for what he was. His place could never be filled because he was not made according to any pattern; he had set his individual mark on the life and memory of all of them. The more general mark he had made on the world at large was made as the guiding spirit of the Medical Research Committee (later Council) during its formative period. He was peculiarly fitted to be a liaison officer between a great branch of the scientific world and the world of politics and administration. He was heart and soul a man of science and a Cambridge man. But he was more. His love of life on all sides, æsthetic, artistic, literary, social, his deep interest in the public welfare, and his great desire to make science subservient to it—these gave him a largeness of mind and heart that is not specially a Cambridge trait but is a gift of God. An American phrase describing workers of a certain class runs, "they sit still and saw wood but do not always look outside the woodshed." Walter Fletcher sawed wood, but his own affections were always out of doors. To the end of his life his eager ranging mind was out of doors and circling the empire and the world, and in whatever company he was, he counted. He always spoke his mind, and it was his merit and sometimes his difficulty that he combined the puritan and cavalier ideal. He never ceased to say: "That is right!," "That is wrong!," but was always faithful to the rock from which he was hewn. He was impatient of people who missed opportunities of enjoying the best that was to be seen, read, done, and heard. Life was for him both a high calling of duty and service and a joyful opportunity with the most varied forms of experience and happiness. Everywhere he wanted to bring accurate information to bear, and he could talk about prints and even wines with a wealth of knowledge. He was an antiquarian whose favourite sport was deer-stalking, and the passage of years found him in training to the end. Fletcher believed in a free and popular form of government, but he knew the want of reverence for scientific knowledge as a guide to public action which besets our English democracy, and rejoiced therefore when the Government consented to endow research through the original Medical Research Committee. Nevertheless he was most anxious to prevent the Medical Research Council in its present form from becoming a mere department of State. Its spirit was to be scientific, and it was to keep the Government of the country in constant touch with scientific minds.

Sir GOWLAND HOPKINS, past president of the Royal Society, said that in Walter Fletcher the man and his work could never be kept very far apart. In 1898 he had been greatly impressed by a paper written by Fletcher, and had looked forward to meeting its author who was at Cambridge, and held a research scholarship at Trinity. Earlier work had already proved him to be an able experimentalist, but the later work, in which Fletcher's own innate gifts came to life, was on a different plane, and showed originality of conception, skilful use of technique; it illuminated fundamentals in biology. In 1900 Fletcher became lecturer in natural science at Trinity, and he had frequent opportunities for meeting him, and soon felt the spell of his exceptional personality. In 1907 he had joined him in research following up certain suggestions already contained in his first paper, and the results of the conjoint work, he ventured to say, strengthened faith in the value of chemical studies as applied to tissue dynamics and encouraged further work in that field. In 1913 appeared a paper by Fletcher himself, on acid production in mammalian muscle, which showed that if Fletcher's subsequent career had been that of an experimental investigator he would have reached eminence; but he doubted whether such a career would have given him complete satisfaction, and in the year of the last publication fate was preparing for him an opportunity for services to science, which, though indirect, were greater than those that any individual investigator could hope to render. As a new departure in legislation a research fund was created under the National Insurance Act, and Fletcher entered on the duties of administrative secretary. That the right man had been chosen at once became clear. The rapidity with which he grasped the whole situation was remarkable, and then, when for the first time this country began to play a proper part in the advancement of medicine by scientific research, the new body had to face the difficulties caused by the war. Fletcher saw to it that every acquisition in knowledge made possible by the exceptional circumstances of the war should be made available for immediate use and recorded for the future, and the issue of those technical reports which formed part of his scheme for the committee were of both immediate and permanent value, and were prized in medical circles everywhere. There was a remarkable advance in medical knowledge during the war, advances to which the Medical Research Committee contributed much; it emerged from the war with its reputation established and its future secure, and Walter Fletcher's war service was second to none. He served the Committee and Council for nearly twenty strenuous years, and no one who ever sat on the Council would ever under-estimate the weight of his influence or doubt the wisdom of his policies. Very near his heart were the interests of the National Research Institute in which they were assembled. He felt great pride in the highly important gains to knowledge which had arisen from the devoted labours of its staff. To catalogue the successes of a career seemed easy; to account for them was sometimes more difficult. Circumstances may count for as much as the man, sometimes more; but in the case of Walter Fletcher circumstances gave him a great opportunity, but his rich successes were surely due to qualities innate in the man himself, not only to those qualities with which he had dealt—investigator, administrator, or devotee to duty—but to those human qualities which Prof. Trevelyan had recalled so vividly.

Lord BALFOUR asked Sir Henry Dale, the director of the institute, to accept the custody of the bust.

Sir HENRY DALE said he was proud to accept the care of the bust from the donors on behalf of his colleagues and all who worked in the Institute. They could never forget what they owed to Walter Fletcher, and his generous pride in their work.

[1] A photograph of the portrait-bust was given in our annotation columns last week.

WESTMINSTER HOSPITAL.—An anonymous gift of £14,000 has been received through Sir George Tilley towards the fund for rebuilding the medical school of this hospital.

IRELAND

(FROM OUR OWN CORRESPONDENT)

A BED BUREAU FOR DUBLIN HOSPITALS

In the report of the Hospitals Commission published about a year ago attention was drawn to the lack of coöperation between the Irish hospitals. In particular it was remarked that "better arrangements are required for ensuring that patients seeking admission to a hospital can be referred to some other hospital when accommodation is not available." Speaking on Nov. 14th at a public meeting in aid of the welfare department of the St. John Ambulance Brigade, Sir John Lumsden stated that the difficulty of obtaining admission for patients to the Dublin hospitals could be put right by arrangement with the hospitals. He said that it was proposed to have a bureau as a result of collaboration between the hospitals, and beds could be got by application to that bureau. It is understood that several of the general hospitals in Dublin have expressed their willingness to join in establishing a bed bureau which would arrange for the speedy admission of patients to available beds. A scheme has, it is stated, been submitted to the Minister for Local Government and Public Health for the constitution and control of such a bureau, and it is at present receiving consideration. There have been many complaints in the press and elsewhere of the delays and difficulties in obtaining admission to hospital even in cases of urgency. This is mainly due to an actual shortage of hospital beds, and this shortage must be corrected or the inconveniences will not only continue but increase, for the population of Dublin is growing rapidly. But much time and trouble could be saved if there were a central office which, by keeping in constant touch with the several hospitals, would know where beds were available, and could therefore arrange for rapid admission. Such a bureau could perform its functions without interfering with the autonomy of any institution or with the normal procedure of admission followed in any institution. The expense of maintenance would not be large and would be fully justified by the services performed.

PROGRESS OF GASTRIC SURGERY

Mr. J. H. Coolican, the incoming president of the Biological Society of the Royal College of Physicians and the Royal College of Surgeons, chose the Progress of Gastric Surgery as the subject of his inaugural address on Nov. 14th. He gave a lucid and well-arranged account of the development of surgery of the stomach from the time of Billroth to the present. He showed not only the different views taken toward particular operative procedures at different times but the varying circumstances which had been causes of the varying views. Other aspects of the question were discussed by Dr. L. Abrahamson, Mr. W. Doolin, Mr. James Owens, and Mr. F. G. Stewart.

INFANT WELFARE IN DUBLIN

Speaking in Dublin on Nov. 14th Dr. Kerry Reddin, medical officer in charge of infant welfare, referred to the rapid advances made in the scope of infant welfare work in recent years in Dublin. He said that ten years ago there were only 400 mothers receiving prenatal care, whereas last year there were 5000. As the total number of the births in the year was 10,000, it meant that 50 per cent. of the mothers were getting prenatal care; he hoped that next year they would be treating 80 per cent. To get efficient work they must back voluntary work by official support.

BUCKSTON BROWNE DINNER

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Sir CUTHBERT WALLACE presided on Nov. 12th at the ninth dinner of fellows and members of the College made possible by the generosity of Sir Buckston Browne. He was supported on his right by Sir Alexander MacCormick and on his left by Sir Arthur MacNalty. Sir Cuthbert opened his brief remarks with a feeling allusion to the death of Lord Moynihan who had for many years presided at this banquet. He recalled the appeal he made last year for specimens to complete the museum, adding that the generous response might be seen after dinner in room No. 1. It had, he said, been an outstanding year for research, and the College was taking its place as a centre of surgical research, attracting workers from all the major dominions, the U.S.A., and European countries. Plans for laboratory development had been drawn up in faith when the allocation of £25,000 by the Bernhard Baron trustees gave the College the chance of making the centre what they wanted it to be. In the meantime offers of bench room had been received from the Medical Research Institute, St. Bartholomew's Hospital, and the London School of Economics. Sir Cuthbert closed with a warm word of thanks to the scientific and administrative staff. "This College," he said, "is uncommonly well served."

Sir BUCKSTON BROWNE said it took some courage to rise after the kind things which had been said about him, but he was consoled by one attribute of old age—namely, that he had no enemies; and in this connexion he recalled the South American president who on his death-bed was being exhorted by his father confessor to ask forgiveness from his enemies; "I have not a single enemy," he answered, and, when further pressed, added "I have shot them all." Sir Buckston said he had not realised his youthful ambition, for he had longed to be a hospital surgeon; but he had failed to pass the final fellowship examination. He was, he remarked, sitting by a member of the College who advised the Minister of Health. He had himself done his lifework as a member of the College for 52 years before he was elected fellow. It was the recollection of these years which led to his desire that members and fellows of the College should meet socially at least once a year.

After dinner the company adjourned to the museum where was set out a remarkable exhibit of methods of preparation, ancient and modern, of anatomical and pathological material, as well as a collection of syphilis literature dating from 1501 onwards. In the research laboratories members of the scientific staff were demonstrating: (1) the surgical treatment of cardiac ischæmia; (2) the local effects of intestinal strangulation; (3) the methods for studying the nature of the nervous impulses producing surgical shock; (4) the technique of producing hypertension by the nephrotoxic method; (5) the experimental evidence for the existence of an uretero-vesical sphincter.

The following is a list of those present:—

Council.—Sir Cuthbert Wallace (president), Sir Charles Gordon-Watson and Mr. Victor Bonney (vice-presidents), Sir Holburt Waring, Prof. Hey Groves (Bristol), Mr. C. H. Fagge, Mr. Sampson Handley, Prof. G. E. Gask, Prof. A. H. Burgess (Manchester), Prof. G. Grey Turner, Mr. Hugh Lett, Prof. R. E. Kelly (Liverpool), Prof. Graham Simpson (Sheffield), Sir James Walton, Sir Alfred Webb-Johnson, Mr. G. Gordon-Taylor, Mr. R. C. Elmslie, Mr. L. R.

Braithwaite (Leeds), Mr. H. S. Souttar, Mr. Girling Ball, Mr. Seymour Barling, Mr. C. Max Page, and Mr. W. H. Ogilvie.

Fellows.—Mr. J. C. Anderson (Sheffield), Mr. George Armitage (Leeds), Sir Robert Armstrong-Jones, Mr. R. St. Leger Brockman (Sheffield), Sir Buckston Browne, Mr. F. J. Cleminson, Mr. Charles Donald, Dr. Wilfrid Edgecombe (Harrogate), Mr. Ernest Finch (Sheffield), Sir Henry Gauvain, Lt.-Col. W. L. Harnett, Mr. J. P. Hedley, Mr. G. C. Knight, Sir Alexander MacCormick (Jersey), Mr. Terence Millin, Mr. H. W. L. Molesworth (Folkestone), Mr. A. M. A. Moore, Dr. Egbert Morland, Mr. Laurence O'Shaughnessy, Mr. Robin Pilcher, Mr. H. H. Rayner (Manchester), Mr. R. H. O. B. Robinson, Mr. B. T. Rose, Mr. J. C. Stewart, Mr. W. R. Underwood, Mr. Cecil Wakeley, Mr. K. M. Walker, Mr. A. J. Watson, Mr. Maurice Whiting, Dr. J. Williamson (Cleethorpes), Mr. Ralph Winterton, and Mr. Dickson Wright.

Members.—Mr. F. M. Allchin, Dr. J. Kingston Barton, Dr. C. Luther Batteson (Watford), Surg. Rear-Admiral C. M. Beadnell, Dr. Izod Bennett, Dr. Mewburn Brown (Birkdale), Dr. R. H. Browne-Carthew, Dr. H. A. Burt (Bath), Dr. W. Byam, Mr. Granville Chapman (Grimsby), Dr. H. B. Corry (Liss), Dr. H. Guy Dain (Birmingham), Dr. B. Dale (Birmingham), Dr. H. P. Daly (Birmingham), Mr. E. Gordon Dingley (Leamington), Dr. A. J. Gibson (Brentwood), Dr. F. J. S. Hall (Walmer), Dr. J. Walker Hirst (Huddersfield), Dr. John Holmes (Southport), Dr. A. W. Holthusen (Westcliff), Dr. N. G. Horner, Dr. Graydon Hume, Mr. A. E. Williams Idris, Dr. R. W. Ironside, Mr. Davenport Jones, Dr. G. D. Kersley (Bath), Dr. F. Desmond MacCarthy, Dr. J. V. Macgregor, Sir Arthur MacNalty (Ministry of Health), Dr. Robert McQueen, Dr. H. L. Marriott, Dr. W. d'A. Maycock, Dr. Charles Miller, Mr. J. C. Mottram, Dr. J. W. Nunn (Hadley), Dr. Bernard Potter, Mr. L. W. Proger (pathological curator), Dr. W. R. Reynell, Dr. G. H. Rossdale, Dr. Harold Sanguinetti, Dr. Eric A. Scott, Sir James Purves-Stewart, Dr. Dudley Stone, Mr. Maxwell Summers, Dr. J. H. Sykes (Birkdale), Dr. J. H. Thursfield, Dr. O. R. Tisdall (Harrow), Mr. A. Toulmin (Preston), Dr. R. F. Tredgold, Dr. H. E. Watkins (Newton-le-Willows), Dr. J. R. Whait, Dr. F. Harris White, and Mr. E. T. Williams (Stockton-on-Tees).

Others present.—Prof. H. H. Woollard, Prof. A. K. Henry, Mr. Horace Rew (director of examinations), Dr. John Beattie (conservator of the museum), Mr. Kennedy Cassels (secretary), Mr. A. J. E. Cave (assistant conservator), Mr. David Slome, Dr. R. J. Kellar, and Mr. W. F. Davis.

PUBLIC HEALTH

The House that Jerry Built

JERRY-BUILDING is not new—the epithet seems to have been used in Liverpool more than a century ago—but since 1918, owing to the boom in house-building, the great increase in owner-occupiers and the drive to abolish slums, the jerry-builder from being a private swindler has become a national menace. Dr. J. Greenwood Wilson, medical officer of health for Cardiff, read a paper[1] on Oct. 10th at the general meeting of the Association of Public Health Chief Clerks about the ways of jerry-builders and the evils of their activities. Houses, however soundly they are built, will always deteriorate, but it is not unreasonable to expect that this process should be slow and that the houses built to replace the worth-less property which we are now pulling down in slum clearances will last until our clearances are completed. But there is so much bad building going on that in many instances the estates which have replaced old slums have themselves become new slums, at least in so far as the habitability of the premises is concerned.

The jerry-builder's case is that competition is keen and profits low, the people who buy his houses ask for innumerable embellishments which cannot be supplied at the price they are prepared to pay, and he cannot give the extras without cutting the essentials—about which his purchasers do not bother until they find out their faults. This is no excuse, but it is a reason. We might expect that houses built by local authorities should not scamp essentials to supply ornaments, for here specifications can be laid down and expert supervision is available. But unfortunately many authorities look upon their housing schemes as embellishments of their towns rather than as the solution of the housing difficulties of the people and pay more attention to what they think is artistic than to what is serviceable. Good materials are dear, but the difference between the first cost of the best and the worst is little compared with the future cost of repair and replacement. We shall not get rid of shoddy stuff unless we insist upon builders using materials of accepted standards. Mortar may mean anything from mud which washes out with the first storm to material as everlasting as Roman cement; and timber may mean fully seasoned beams of full length and stoutness, or green sappy laths, meagre in diameter and length, which rapidly shrink and decay. The damp course, the first thing to be considered, is expected to be of durable material impervious to moisture; it may be, and often is, brown paper with a little tar which with luck may be damp proof for a few months. No new house may be built until the plans have been passed by the local council and when completed it may not be sold or let without a certificate from the local surveyor; but this is no guarantee that the house is well built or that the materials used are satisfactory. So the certificate is a snare and not a guarantee. Most houses are bought through building societies, or by loans from local authorities on the hire-purchase system. The period of repayment is usually 20 years and, so long as the value of the property keeps pace with the decreasing loan, little attention is paid to the soundness of the investment. Some of our worst jerry-built houses deteriorate so fast that they become poor cover for their outstanding loans; therein lies some bar to the worst of bad building. But for what is a little less bad there is at present no safeguard.

The remedy for jerry-building may be found in (1) the prohibition of materials below an accepted standard, or (2) the requirement of a guarantee by the builder to the buyer. Neither of these do we possess, although Dr. Wilson reminds us that under the new Public Health Act local building by-laws must be revised every ten years and the revision submitted for approval to the Minister of Health. Dr. Wilson is not alone in his alarm that the laudable desire to rehouse the ill-housed might be defeated by shoddy building. When Dr. Addison framed his first Housing Act, public health experts foresaw the danger and warned local authorities that what was wanted was not "homes for heroes" but houses of the simplest construction which were built soundly and could be kept sound.

[1] Medical Officer, Oct. 24th, p. 173.

CORRESPONDENCE

A CHRISTMAS APPEAL

To the Editor of THE LANCET

SIR,—By your kind permission I appealed to your readers in October for contributions towards the Christmas Gift Fund of the Royal Medical Benevolent Fund. Only a few weeks remain before Christmas and I am anxious to have sufficient funds to allow of the gift of 30*s.* to be distributed to all our beneficiaries. May I ask those who intend to contribute kindly to send their cheques as soon as possible to the hon. treasurer, Royal Medical Benevolent Fund, 11, Chandos-street, London, W.1.

I hope the response to this reminder will be a very generous one. Great would be the disappointment in the hearts of those beneficiaries if, through lack of funds, we could not give them the 30*s.* gift which they have so greatly valued in other years.

I am, Sir, yours faithfully,

THOS. BARLOW,
President.

Nov. 11th.

PROTECTION ON RETIREMENT FROM PRACTICE

To the Editor of THE LANCET

SIR,—It has been a matter of concern for some time to the council of the Medical Defence Union that year by year practitioners resign their membership at the moment of retirement from active practice, and this in spite of a letter indicating to them that even after retirement they are still liable to attack for alleged misdeeds whilst in practice. At the annual meeting of the Union held on Sept. 24th this year a proposition was put forward that to encourage retiring practitioners to maintain their protection special terms of life membership should be offered to them. This general proposal was approved by all those members of the Union present.

The council of the Union at its last meeting decided upon the details of an arrangement by which a member retiring from practice who had belonged to the Union for the period mentioned should become a life member upon a single payment as follows:—

Membership of—	One payment of—
10 years or less	Three guineas.
10 to 15 years	Two guineas.
More than 15 years	One guinea.

It is of the essence of this arrangement that the protection afforded by this life membership shall be co-related to the period when the member was in practice, and shall cease to hold good should such a retired member re-engage in practice in any form other than a casual attendance dictated by the circumstances of an accident or an emergency. If, therefore, a retired life member covered by this arrangement starts practice again it would be necessary for him to be reinstated as an ordinary member by paying the appropriate annual subscription until the time when he again retired, after which his life membership would be resumed without further payment.

Practitioners must appreciate that whilst the Statute of Limitations may be a good defence for actions brought more than six years after the occurrence, considerable expense may be incurred before the moment arrives when the Statute can be pleaded. Our records show many an instance of several years elapsing before an attack is made upon a doctor—in one case as long as 22 years.

The above arrangement becomes operative on Jan. 1st, 1937, and will be offered to all those members of the Union who have resigned during 1936 by reason of retirement from practice. It is possible that the arrangement when known will appeal to practitioners who retired prior to 1936. Should they wish to avail themselves of these provisions they will be required to pay such annual subscriptions as will make them continuous members up to and including the year 1936.

I am, Sir, yours faithfully,

ERIC PEARCE GOULD,
President of the Medical Defence Union.

49, Bedford-square, W.C.1, Nov. 5th.

*** This letter is commented on in a leading article.—ED. L.

BENGAL SPLENOMEGALY

To the Editor of THE LANCET

SIR,—It is to be hoped that the instructive article by Prof. L. E. Napier, entitled Tropical Macrocytic Anæmia, which appeared in THE LANCET of Sept. 19th (p. 679) will stimulate workers in other parts of India and the tropics generally to record more detailed clinical and hæmatological observations on anæmic patients. Excluding from his series cases of pernicious anæmia and tropical sprue, Prof. Napier differentiated two groups of megalocytic anæmia. One conformed to tropical macrocytic anæmia as described by L. Wills, the other, which was characterised by fever, splenomegaly, hyperbilirubinæmia, and reticulocytosis, he designated "Bengal splenomegaly."

A case identical with this so-called Bengal splenomegaly was recorded in detail by me two years ago under the heading "Rarer forms of megalocytic anæmia encountered in the tropics" (Trans. Roy. Soc. Trop. Med. and Hyg., 1934, xxvii., 563), but in this instance the patient had never set foot in Bengal. He was a Punjabi mussulman, aged 22 years, who had been a ship's fireman for 4 years. Careful inquiry at the time had elicited that he had never been further east of the Indian mainland than Delhi; he had spent several periods ashore in Bombay and on one occasion had called at Calcutta but had not left the ship. In 1933 he had suffered from recurrent fever and 6 months later had noted enlargement of the spleen. He was subsequently admitted to the Tilbury Hospital with gastro-intestinal symptoms and splenomegaly, and on Nov. 16th, 1933, was transferred to the Hospital for Tropical Diseases under Dr. Carmichael Low, where I investigated the case in detail.

No evidence was available that the patient had been on a deficient dietary prior to his admission to hospital. Physical examination revealed great enlargement of the spleen which extended below the umbilicus, severe megalocytic anæmia, a hyperbilirubinæmia of 4 units (indirect van den Bergh reaction), a reticulocytosis varying from 6·0 to 16·5 per cent., and an achlorhydria not responding to histamine. The megalocytic nature of the anæmia was confirmed by the Price-Jones curve. A mild ankylostome infestation was present; this was treated without improvement in the anæmia. Elaborate laboratory investigations were undertaken to exclude malaria and kala-azar, and a full course of Neostibosan was administered without effect. Finally the condition was cured by Campolon injections and liver extract therapy (equiv. of 1½ lb. daily) which induced a maximal reticulocyte response of 34·5 per cent. on the ninth day and rapid blood regeneration. The Price-Jones curve was restored to normal and on repeating the fractional test-meal the achlorhydria was found to have been replaced by a high

normal acid curve (maximal HCl=55 N/10 c.cm. acid at 1¾ hours). On discharge the patient appeared perfectly fit with a normal blood count; the spleen had decreased in size but was still palpable.

In Bombay before the introduction of liver extract I had occasionally encountered cases with splenomegaly simulating pernicious anæmia in whom free HCl was demonstrable in the gastric juice, and in whom evidence of malaria and kala-azar was not forthcoming. Probably such cases fall into this category.

While there are justifiable grounds for regarding this disease as a new entity, the term "Bengal splenomegaly" hardly appears appropriate on geographical grounds, since the first case to be described came from the Punjab, and further observation will probably reveal a much wider distribution than the provincial appellation implies. A better name would be "Indian splenomegaly."

I am, Sir, yours faithfully,

N. HAMILTON FAIRLEY.

Harley-street, W., Nov. 11th.

THE TREATMENT OF PLEURAL EFFUSIONS

To the Editor of THE LANCET

SIR,—The Royal Society of Medicine's discussion (reported in your issue of Oct. 31st) merits I think further consideration. There appears to be a legitimate difference of opinion as to whether every so-called simple pleural effusion should be replaced by air, but all are agreed that every such case needs very careful convalescence along sanatorium lines under conditions which allow of accurate observation by a trained physician with ready facilities for sputum and X ray examinations, and that some such observation should be maintained for a period of a few years. Those physicians who have performed an air replacement in the early stages further desire that a competent physician should be available to maintain the resulting pneumothorax. These facilities can usually be obtained by notifying the case as one of tuberculosis with a request to the local authority to provide sanatorium treatment and later supervision by its tuberculosis officer. There are, however, definite disadvantages to this course, for notification does from time to time prejudice a man adversely as regards employment, insurance, and even social life. The Ministry's classification includes these cases in the pulmonary group, and this fact, although technically correct, tends to further the prejudice. There should not be this adverse effect of notification, but in practice it does exist in most areas to a greater or lesser extent. Whilst we are most of us agreed that academically pleural effusion is evidence of tuberculous infection, yet personally I hold that notification is not a legal obligation, as it cannot be described as tuberculosis in the ordinary meaning of the word. My first plea is therefore that these cases should be treated under the tuberculosis schemes as persons particularly liable to develop tuberculosis and for whom treatment may prevent its development, but without actual notification.

Again, in spite of Dr. Watt's protest (Nov. 7th) against the suggestion that cases of pleural effusion could be reinfected in a sanatorium, I find that physicians generally are by no means too happy about this impossibility, and this is evidenced by Dr. Burton Wood's letter as well as by the actual words which he used in the discussion. Even tuberculosis officers I think are not quite satisfied at times as to the propriety of sending their cases to a sanatorium, if reasonable convalescence and supervision can be otherwise obtained. I would like most deferentially to remind my former chief, Dr. Watt, that all institutions are by no means as well administered as King George V Sanatorium, and that even there the careless sputum-positive case may have the opportunity to infect others before his habits are discovered. My second plea is therefore that local authorities should provide what Dr. Burton Wood calls preventoriums, and which I should prefer in case of possible prejudice simply to call special convalescent homes. These could be organised along recognised sanatorium lines under the charge of experienced chest physicians who would collaborate with tuberculosis officers and others, and who would transfer to sanatorium the sputum-positive case when discovered.

There is a group of persons in much the same category as the pleural effusions—namely, those debilitated young adults who have been in contact with sputum-positive cases of tuberculosis. It is possible at present to do very little if anything for these persons to build up their general health so as to resist adequately the latent infection which most of them carry. They also represent a class of persons particularly liable to develop the disease, and could often with advantage be very suitably treated under observation in institutions such as those described. If convinced of the real need for such special convalescent homes, I believe that local authorities would be prepared to consider favourably their provision.—I am, Sir, yours faithfully,

C. O. S. BLYTH BROOKE,
Tuberculosis Officer, Finsbury.

Town Hall, Finsbury, E.C., Nov. 13th.

DUODENAL ULCERS AND CIGARETTE SMOKING

To the Editor of THE LANCET

SIR,—The frequent appearance of articles in the medical journals on the relative merits of medical and surgical treatment of duodenal ulcer marks the prevalence of the condition and points to its great importance. I do not remember, in these articles and dissertations, any suggestion of an investigation into the ætiology of the condition. My present line in life does not bring me into touch with any but an occasional victim of the duodenal ulcer, but, for many years, I was engaged in very general practice and included in it I had to meet and deal with epidemics and other public health matters. As a result, medical problems appeal to me from a very general point of view, and it seems to me that this approach to ætiology has been of help in elucidating one aspect of the causation of duodenal ulcer.

My first special interest in the disease occurred in 1924, when I had temporary opportunities of taking out-patient duty at a teaching hospital. It was soon quite obvious that the types of cases I met with were different from those that prevailed in the latter years of the nineteenth century when I first came into contact with clinical work. One outstanding novelty was the duodenal ulcer, and, when inquisitive students tried to corner me on the subject of its causation, I was driven to try and find something to satisfy their curiosity. It was here that my very general experience came to my rescue, as I put to myself the question—duodenal ulcer was unusual twenty-five years ago, and is prevalent now; is there any common alteration, since my student days, in the habits of men who, in 1924 at any rate, seemed to have a monopoly of this disease? The only habit I could think of was the cigarette habit which,

starting in the South African War, acquired an almost universal prevalence in the Great War. When I put the idea forward to the students, they disagreed because they were nearly all cigarette smokers, and had no ulcers. "Yes, but wait till the fourth decade of your lives" I said. Since those days I have had only occasional experience with duodenal-ulcer patients, but all have been heavy smokers, and only a few days ago a patient told me that he could always produce trouble by resuming smoking. A radiologist has recently told me that he is now getting cases of duodenal ulcer among women who have acquired much the same cigarette habits as men. Of course all cigarette smokers do not get duodenal ulcers any more than all alcoholics get delirium tremens.

The late Lord Moynihan has stated that, if his duodenal-ulcer patients asked about smoking, he told them to expect a recurrence of trouble if they resumed their smoking. The late Mr. Tyrrell Gray also noted the prejudicial effects of smoking in these cases, but I have not yet met the article devoted to bringing out the importance of this question, and I am not in a position to take it up in a detailed scientific fashion, nor bring the matter into "a scientific net which I could weave or cast"—to adapt a line from your recent leading article on the factors of epidemicity.—I am, Sir, yours faithfully,

Harley-street, W., Nov. 12th. V. S. HODSON.

THE ÆTIOLOGY OF ACUTE RHEUMATISM

To the Editor of THE LANCET

SIR,—May I endorse very warmly Dr. Poynton's protest in your last issue against the use of the term "pyogenes" in reference to streptococci found in cases of acute rheumatism. It will, surely, be agreed that there is hardly any type of acute inflammation less likely to be suppurative than acute rheumatism, the focal lesions of which exhibit a cell-reaction of the granulation tissue type, and not the polymorph-phagocyte reaction of streptococcal suppuration. If the term pyogenes is used, merely for want of a better, in order to distinguish virulent from avirulent strains of streptococci, and infective from non-infective, a substitute could easily be found. In that regard a better adjective would be "pathogenes." But, since we still commonly use the term pneumococcus for the causal agent of acute lobar pneumonia rather than streptococcus pneumoniæ, why not use the name micrococcus, or streptococcus, or even diplococcus rheumaticus for the streptococci found in acute rheumatism?

When I began to work on the bacteriology of acute rheumatism at Guy's Hospital in 1901, Poynton and his co-worker Paine had already discovered and described their organism. But, unfortunately, Paine described it as a Gram-negative diplococcus. The organism which I isolated from a series of cases at Guy's was of streptococcal form and staining reaction, and I so described it. Shortly after, I was able, by the courtesy of Drs. Poynton and Paine, to examine carefully some of their slides, which they kindly showed me. On that occasion I quickly formed the opinion, which I expressed quite definitely, that what I saw was, in my judgment, a Gram-positive streptococcus, not more strikingly paired in arrangement than are many rapidly dividing streptococci in culture. I concluded that we had both discovered the same organism, and that my work was a confirmation of the main thesis put forward by Dr. Poynton, to whose long-continued later studies we owe so much. But our early divergence of description, on a point to which bacteriologists necessarily attribute decisive importance, doubtless operated unfavourably on general bacteriological opinion as to the validity of our observations. All the more so, when some bacteriologists of standing in London declared that they had sought carefully, but in vain, to confirm the findings.

With Dr. Poynton I must confess that time has been my master; but work goes on, though it be in other hands, and every year it seems to me more and more likely that time will eventually justify the conclusions of our forgotten labours. It happened that my own work on acute rheumatism was early brought to an end by removal to a new sphere, in which access to suitable clinical material was then lacking; but not before I had been able to convince myself, and state, that no method then available to me revealed any *qualitative* difference between the micrococcus rheumaticus and other pathogenetic streptococci. I had, however, discovered, with the help of Dr. Ryffel, that the streptococcus from acute rheumatism produced considerable amounts of formic acid in ordinary broth culture (and broke up added sodium lactate into equal moieties of formate and acetate), whereas the other strains of streptococci then examined produced formic acid in only small amount. This finding, I still venture to think, may not be without significance in the symptomatology and pathology of rheumatism.

I am, Sir, yours faithfully,

E. W. AINLEY WALKER.

University College, Oxford, Nov. 14th.

THE HEART IN EXERCISE

To the Editor of THE LANCET

SIR,—Among the annotations in THE LANCET of Oct. 31st is one with the above title, recording briefly some recent radiological observations on the heart "during and after exercise," and suggesting that they negative the "physiological dilatation" demonstrated in Starling's Law of the Heart,[1] and claiming that the increase of minute-volume (output of one ventricle per minute) is due to "active diminution in the size of the heart with increased emptying power." I do not share these views: and it would be unfortunate if the idea should prevail that physiology and radiology were not found to support rather than to contradict one another.

Hearts differ in size, but Halliburton states of an average heart that "during life each ventricle is capable of containing about three fluid ounces." They may contain less, or may eject only part of their content at any systole, but it is obvious that without dilatation they cannot eject more. Yet the increase of minute-volume as ascertained by Krogh, A. V. Hill, Douglas and Haldane and others (by differing methods) and accepted by physiologists generally implies, according to A. V. Hill, that in extreme exertion "each side of the heart ejects 200 c.cm. (close on 7 fl. oz.) at each beat." How a smaller container can by a harder push eject more than it contains is incomprehensible.

Starling's convincing demonstration of "physiological dilatation" which he shows to be an *active* process (not a passive one as mentioned in your note) and followed by an "increased energy of contraction" exactly meets the case; nor is it incompatible with radiographical findings. The output of the heart is determined by its intake, and the extra minute-volume of muscular exercise is due to the

[1] Linacre Lecture, 1915.

extra pumping of blood by the muscles into the veins. The more muscles at work and the harder they work the more copious is the venous filling, but it is only in extreme exercise (as in say a boat-race), when *all* the voluntary muscles are hard at work at the same time, that the extreme 7 fl. oz. ventricular output is reached. As soon as the athlete comes to rest the increased venous filling abruptly ceases, and before he can be examined after a race the minute-volume will have been reduced to resting level. A healthy heart may even be found to be smaller than before the race. Dumb-bell exercise, when only a limited number of muscles are at work, does not necessitate dilatation, while observations taken between bouts of exercise merely record conditions in an individual at rest.

The material briefly summarised above was discussed at some length in a fully documented paper on Physiological Dilation of the Heart to be found in the *British Medical Journal* of Feb. 1st, 1930.

I am, Sir, yours faithfully,

Tunbridge Wells, Nov. 12th. CLAUDE WILSON.

ŒSTRIN IN TOXIC GOITRE

To the Editor of THE LANCET

SIR,—In your issue of Oct. 24th Dr. A. W. Spence puts forward very sound arguments, based on experimental work, for the treatment of toxic goitre with œstrin: the principle of which is to inhibit the anterior pituitary thyrotropic hormone which is thought to be overacting. The disappointing negative results in his series of six cases do not convince me that this mode of attack is in fact useless. I would suggest that it is not possible to draw any such conclusions as to its efficacy from his experiments. My reasons for such a statement are based partly on work by Prof. B. Zondek (THE LANCET, Oct. 10th) and others, and my own experiences over a period of two years with massive doses of Progynon in the treatment of kraurosis vulvæ.

Zondek reports that to cause adequate dwarfing of cockerels, 1,600,000 mouse units of Dimenformon had to be administered in 112 days. In the rat, similar dwarfing was produced after giving 365,000 mouse units in 112 days. The cockerels required about 4·4 times the dose given to the rats. Zondek says that the gonadotropic function is the first to be impaired, and then the growth hormone: relatively more treatment being required to inhibit the latter. We then examined Dr. Spence's dosage and duration of treatment and find that he draws his conclusions after administering between 550,000–1,000,000 international units in periods between 11 and 20 days respectively. It has been shown that dosage for individual animals can be calculated roughly on a weight-for-weight basis, although different animals show slight divergences from this. According to this reckoning Dr. Spence's patients, weighing from 80–100 lb., would need approximately twenty times the dose required by Zondek's cockerels, weighing about 4 lb. Judging by the comparative doses, weight for weight, of Zondek's rats and cockerels, this ratio might be taken as two-thirds of the figure mentioned above. In that case it would seem that a suitable minimum dose expected to inhibit the pituitary growth hormone in humans would be in the region of 14,000,000 I.U. in a similar time of 112 days.

After a short experience of treating cases of kraurosis vulvæ with progynon, in women past the menopause, I found that relief was not usually obtained until about 1,100,000 international benzoate units had been given in 15 days, and in some cases full treatment consisted of 5,520,000 I.B.U. in 147 days. These are much larger doses than normally used in human therapy. Dr. Jones and Mr. MacGregor (THE LANCET, Oct. 24th) were able to inhibit appearance of gonadotropic hormone in the urine of post-menopausal cases by doses almost as large as mine, over periods up to 60 days.

From these rough figures it would appear that before inhibition of thyrotropic hormone (at a later sequence probably than gonadotropic and growth hormones) can be effective, a suggested daily dose of 100,000 I.B.U. for 140 days, or 200–300,000 I.B.U. biweekly for a correspondingly longer period, should be tried. I offer this as a suggestion, though at the same time I appreciate the difficulty of applying it in practice to cases of toxic goitre in hospital. But until it has been done, I do not think that one is in a position to state that œstrin is not of use in the treatment of toxic goitre, even though Zondek intimates that œstrin may even stimulate thyrotropic and parathyrotropic pituitary hormones.

I assume, in this argument, that 1 M.U. (Zondek)=1 I.U. (Spence)=1 I.B.U.=0·1 gamma of œstradiol benzoate, since both dimenformon (Organon) and progynon (Schering) are œstradiol benzoate dissolved in oil.

I am, Sir, yours faithfully,

Bristol, Nov. 13th. GEORGE L. FOSS.

CHARITABLE APPEALS ON A COMMISSION BASIS

To the Editor of THE LANCET

SIR,—In view of the publicity given in your last week's issue to the libel action, Jewett *v.* Odhams Press Ltd., the committee of management of Queen Charlotte's Maternity Hospital would be glad if you would give the same publicity to the statement that they have no record of Miss Jewett having been employed by them. The method of collecting money on commission is one which would not be considered by the committee, or receive their sanction.

I am, Sir, yours faithfully,

H. B. STOKES,
Secretary-Superintendent.

Queen Charlotte's Maternity Hospital,
London, N.W.1, Nov. 16th.

DELTOIDITIS IN GOLFERS

To the Editor of THE LANCET

SIR,—Among tennis players the so-called tennis-elbow is well known, but I am unaware that an analogous condition in those who play golf has been described. The trouble exists exclusively in the left shoulder, and I suggest calling it "golfer's shoulder." I have recently met with the condition in two English golfers who came to me at Aix for rheumatism in the neck. The first, 69 years of age, had played golf once a week for 35 years. The second, aged 52, complained of lumbago; he had played golf four or five times weekly for 15 years. Both presented deltoiditis in the left shoulder.

The chief characteristic sign is pain in the left arm at the insertion of the deltoid. There are two varieties of pain. One is spontaneous, occurs without reason, and may disappear for several days. When present it is in the form of an aching and stiffness when the deltoid is brought into action, the elevation of the arm to the horizontal being difficult. The other pain is constant and unvarying, provoked by pressure on the area of the humeral insertion of the deltoid, pressure on other parts of the muscle being painless. There is no trace of hypertrophy nor of wasting of

the deltoid. The pain may be compared to that of tennis-elbow and is very probably due to strain on the insertion of the deltoid when swinging the club. The pain is not increased by play. One of the patients could not remember when he first felt it, although he had been a golfer for 35 years. The other, who had played for 15 years, first noted pain only six months ago.

The trouble is a very mild one and occurs in the left arm only. As my patients were in Aix only for 21 days, I could not do much for them beyond using daily mild massage under hot mineral water for ten minutes and injections of sodium iodide at the painful spot. These seemed to relieve the pain.

I am, Sir, yours faithfully,

Aix-les-Bains, Oct. 31st. ABEL FRANÇON.

RENAL INSUFFICIENCY IN ADDISON'S DISEASE AND DIABETES

To the Editor of THE LANCET

SIR,—In your last issue Prof. Jimenez-Diaz presents an interesting suggestion of the cause of metabolic failure and death in Addison's disease, ascribing it primarily to failure of ammonia formation by the kidney. When, however, he ascribes death in diabetic coma with disturbed renal function to a similar failure we think he is wrong. At any rate, we did not find this when we were investigating the function of the kidney in diabetic coma (Quart. Jour. Med., 1935, iv., 53). We found that the amount of ammonia excreted bore a fixed and normal relationship to the amount of acid in the urine not combined with fixed base. In simpler language the excretion of ammonia remained normal even in severe diabetic comas in which other functions of the kidney such as the excretion of urea and glucose were seriously disorganised. We are, Sir, yours faithfully,

R. D. LAWRENCE,
London, Nov. 18th. R. A. MCCANCE.

VOLUNTARY HOSPITALS AND THE NEW ACT

To the Editor of THE LANCET

SIR,—The aspect of Section 2 (2) of the Voluntary Hospitals (Paying Patients) Act with which I was concerned in my paper read to the Medico-Legal Society was, of course, far less important than the point to which Lord Luke directs attention. Hospitals may now charge for "medical and surgical attendance and treatment." Three years ago the law on the subject was laid down by Mr. H. C. Dickens in a paper read to that society (Med.-Legal and Crimin. Rev., vol. i., p. 199) "as a settled proposition that a governing body does not undertake to treat, whether operatively or otherwise, or to anæsthetize, or to nurse the patient who enters their institution." If the hospital charges for treatment the patient will believe that the hospital is liable for the treatment and even that he is paying on a contract to that effect. Forewarned is forearmed.

I am, Sir, yours faithfully,

C. E. A. BEDWELL,
House Governor, King's College Hospital.
Denmark-hill, S.E., Nov. 17th.

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index.

FROM A DOCTOR IN RETIREMENT

III

IT has always been to me a matter of wonder how the journalists who write the chatty columns of topical comments in the newspapers manage to do so, day after day, year after year. Surely there must be blank days when nothing on earth occurs to them to write about. But no close reader of the daily or weekly press can have failed to notice what generous space is always given to news and jottings about animals. Apparently when a journalist finds himself in a dilemma for a subject to write about he turns to nature, or else to stories about dogs. These two topics, for no one would class dogs under the heading of nature, seem to have an irresistible attraction for English readers. Scarcely a day passes but you read in your newspaper a letter addressed to the editor describing some bird which the writer has observed picking crumbs on his windowsill, or recounting some extraordinary and almost human action on the part of a dog. Some of these anecdotes come from "constant readers," others from professional newspaper correspondents, and both show a greater credulity than knowledge of the habits of animals. On July 4th, 1935, to be precise, there appeared in a London newspaper the following telegram from its Paris correspondent:—

> A rabid rabbit at Lille has just killed 10 fowls and 3 ducks, in addition to biting a dog and 2 cats (which have been destroyed), and a man, his wife, and 3 children.

In the same newspaper was printed an account from its New York correspondent, which described how a poor girl student at one of the universities, in order to earn some money to pay her college fees, publicly swallowed a live goldfish. One wonders what the American Society for the Protection of Animals was about to allow such a thing to take place without protest. I hope that the editor of the *Ilfracombe Chronicle* will raise no objection if I give in full a letter he printed in his estimable journal not long ago, written by a "Visitor." It certainly demonstrates, as I think has never been done before nor done half so meticulously, the thinking abilities of one of the lower forms of marine life. The letter is headed:

"CAN LIMPETS THINK?"

SIR,—Last week, on the beach at the Tunnels, Ilfracombe, I saw something, to me, almost unbelievable. With my walking cane I dislodged a limpet which fell into a pond about two inches below the water level and rested on a rounded ledge upside down. Watching it slowly moving the fleshy part, endeavouring to get hold of something—which it could not do—to turn over, I noticed another limpet about six inches deeper in the pool slowly moving along. It came up to the overturned limpet and moved under it. The first limpet was then able to reach with its extended fleshy part the shell of the other one, and so turned over on the other one's shell. It then moved off the shell to the rock. I could hardly believe what I saw, and think that possibly the occurrence might be interesting to some of your readers. The whole operation lasted about 45 minutes.

* * *

It is not often that reports of strange behaviour in animals reach our newspapers from the Scandinavian countries; most of the more extraordinary ones come from the Homeland or else from God's

Own Country across the Atlantic. It is therefore with all the greater pleasure that I am able to rescue from oblivion the following touching story of a little animal's heroism, which was reported from Sweden.

HEDGEHOG FIGHTS FIRE

After a farm worker at Ydresocken, Sweden, had set fire to a heap of rubbish he saw a hedgehog come out. The animal went to a pool, filled its mouth with water, and then went back to the burning wood. It squirted the water from its mouth on to the flames, and returned to the pool for more. The man kicked aside the burning branches and in the middle found five young hedgehogs.

It was exasperating of the foreign correspondent who sent this moving narrative of maternal heroism to neglect to tell us what was the end of the story. Was it a happy one? Was the brave and prickly mother and her five little ones given a new home? Was the hedgehog rewarded in any way, with a medal or a bowl of bread and milk?

* * *

As to stories about dogs, no editor dare refuse to print one. A West Sussex newspaper, reporting in full the solemn Armistice rites at a local village, gave the following example of canine sagacity.

On Monday the two minutes' silence was faithfully observed in the district, and an extraordinary incident was witnessed by the writer in Bramber. Immediately the silence commenced a large Airedale dog from the Castle Hotel walked to the centre of the road, stood perfectly still with bowed head during the whole of the silence, and at the close of it walked calmly away.

But it is at the funeral services of fox-hunting men that we see the dog-fanatic at his best, or worst. At these solemn ceremonies, dog-lovers and hunting men in general appear to lose all sense of proportion. Here is how they laid to rest in consecrated ground the human remains of a late master of fox-hounds.

HOUNDS AT MEMORIAL SERVICE: FORMER M.F.H. BURIED

Hounds from the packs of the Croome, Worcestershire, Cotswold, and Ledbury Hunts were present yesterday at a memorial service at Upon-on-Severn, for Mr. ——, master of the Croome from —— to ——.

But read the description of the funeral of a hunting baronet of Staffordshire, who was for many years master of the South Staffs hounds. The paragraph is headed:—

"GONE TO GROUND": HUNTING CALL AT A BARONET'S FUNERAL

The coffin was borne on a farm lorry which was preceded by the huntsman and hounds, and followed by a favourite horse of Sir ——. As the coffin was being lowered into the family vault the head huntsman sounded the call "Gone to ground."

All of which goes to show how difficult it is if you are not a hunting man yourself to judge or understand the mentality of those who are.

* * *

All this grave chatter about funerals and burials naturally leads the mind to another solemn subject. To some of us who have, perhaps, minds with a morbid kink in them, the "In Memorian" column of local papers often rewards perusal. Here is an extract from one which appeared in a Midland newspaper.

We often think of you,
We often speak your name,
But the only answer we get
Is your photograph in a frame.

Sometimes these homely verses to the departed give the impression that there is more meaning behind the actual words than appears apparent to the reader who did not know the deceased, nor his or her family or relations. In the following, one cannot but suspect that the bereaved were having a sly dig at some persons unnamed.

We never have, we never will
Forget our mother kind;
She never done a dirty trick
Like some she left behind.

And this sad and solemn subject reminds me of an epitaph which can be read on the head stone on the grave of a deceased lady poultry-farmer at St. Albans.

Sacred to the memory of Miss Martha Gwynn,
Who was so very pure within,
She burst the outer shell of sin,
And hatched herself a cherubim.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Comdr. J. V. Williams to *Victory* for R.N. Hospital, Haslar.

Surg. Lt.-Comdr. W. Greaves to *Penelope* on commg.

H. C. Brewerton, R. D. Johnston, G. P. Pearse, C. E. Fitton, and R. A. Hilton entered as Surg. Lts (D) for short service, and all apptd. to R.N. Hosp., Haslar, for course of instruction.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt. (D) K. V. M. Taylor-Milton promoted to Surg. Lt.-Comdr. (D).

Surg. Lt. W. D. Williams to *Drake* for R.N.B.

Surg. Sub-Lt. R. T. May promoted to Surg. Lt.

ROYAL ARMY MEDICAL CORPS

The following candidates have been selected for short-service commissions as lieutenants on probation in the R.A.M.C.: A. F. H. Keatinge, Dublin Univ.; G. G. Smith, St. Thomas's; J. A. Manifold, St. Thomas's; R. S. Hunt, Cambridge Univ. and St. Bart.'s; W. Thomson, Glasgow Univ.; P. H. Ball, St. Bart.'s; G. B. Heugh, London Hosp.; W. Stewart, Aberdeen Univ.; W. G. MacDougall, Edinburgh Univ.; R. A. Smart, Aberdeen Univ.; R. J. Niven, St. Thomas's; J. V. L. Farquhar, Cambridge Univ. and St. Bart.'s; E. A. Smyth, Dublin Univ.; J. A. Davidson, McGill Univ.; E. H. Evans, Cardiff Univ. and St. Bart.'s; J. A. V. Nicoll, St. Bart.'s; E. W. O. Skinner, St. Mary's; D. G. Levis, Cambridge Univ. and St. Bart.'s; C. L. Lewis, St. Bart.'s; W. D. Eustace, R.C.S., Ireland; I. N. Fulton, Cambridge Univ. and St. Bart.'s; N. R. Murdoch, Glasgow Univ.; and S. H. Gibbs, Edinburgh Univ.

Short Serv. Commissions: Lts. (on prob.) restd. to the estabt.: W. N. L. Haynes, J. R. Kellett, and K. G. F. Mackenzie. Lt. (on prob.) S. E. Osborne resigns his commn.

ROYAL AIR FORCE

Wing Comdrs. C. T. O'Neill to Headquarters Coastal Command, Lee-on-Solent, for duty as Deputy Principal Medical Officer; F. J. Murphy, to Headquarters, R.A.F., Middle East, Cairo, Egypt, for duty as Deputy Principal Medical Officer (Hygiene); W. F. Wilson, M.C., to No. 4 Flying Training School, Abu Sueir, Egypt, for duty as Senior Medical Officer.

INDIAN MEDICAL SERVICE

Majs. to be Lt.-Cols.: H. R. Cursetji and S. L. Bhatia, M.C.

Lt.-Col. M. A. Rahman retires.

To be Lts. (on prob.): M. C. L. Smith, W. Laurie, B. M. Wheeler, A. H. W. Mitchell, C. H. Bliss, B. J. Doran (secd.), R. B. Davis, F. MacD. Byrn, and J. H. Cater.

Indian Medical Department.—Maj. (Sen. Asst. Surg.) J. B. D'Souza, M.B.E., retires.

COLONIAL MEDICAL SERVICE

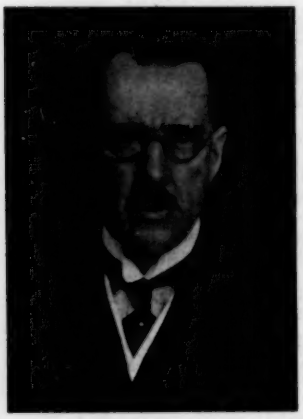
Dr. L. W. Fitzmaurice has been appointed Assistant Medical Officer, Bahamas.

OBITUARY

ROBERT HENRY ELLIOT, D.Sc. Edin., M.D. Lond., F.R.C.S. Eng.

LT.-COL., I.M.S. (RETD.)

Colonel R. H. Elliot, whose death on Nov. 9th was briefly recorded last week, had made his name as an ophthalmologist before retiring from the Indian Medical Service at the age of 50 and with the most fruitful part of his life still before him. Born in the Bombay Presidency, the son of an officer in the 4th King's Own Regiment, he was educated at Bedford School and St. Bartholomew's Hospital, where and at Netley he took most of the available prizes. Entering the Indian Medical Service in 1892 he passed the usual period of military service on the North-West Frontier and in Burma. On being transferred to the Government of Madras for civil employment his qualities were soon recognised and he obtained various posts at headquarters. Later he was seconded to work with Sir Thomas Fraser in Edinburgh on the action of snake venom, and his experience there gave him a bias towards snakes and their habits which lasted through life. After visiting the leading European ophthalmic clinics, he was appointed superintendent of the Madras Ophthalmic Hospital, an appointment which offered him scope to develop his powers of organisation, and the hospital soon became prominent in the investigation and treatment of eye diseases. Elliot was himself a brilliant operator, first making his mark as such in the treatment of chronic non-congestive glaucoma. He quickly recognised the value of Lagrange's work and set himself to devise a safe and simple method of securing a filtering scar. The operation of sclero-corneal trephining which bears his name was the result.



COLONEL ELLIOT

[Photograph by Elliott & Fry

Ill health due to the tropical climate compelled him to leave Madras in 1912, when he took up consulting work in London and soon acquired a large practice. He was appointed ophthalmic surgeon to the Prince of Wales's Hospital at Tottenham and to the Hospital for Tropical Diseases. His knowledge of the tropical conditions which affect eye disease was unique, a fact to which his book on "Tropical Ophthalmology" bears witness. His vivid lectures at the London School of Hygiene were much valued by the students. Convinced that asthenopia plays an important part in provoking migraine he paid close attention to the correction of errors of refraction and excelled in this branch of his specialty. After his retirement from India he joined the council of the British Medical Association and was for five years chairman of its naval and military committee. The officers of his old service owe him a debt of gratitude for the ability with which he advocated their interests; his efforts were instrumental in securing in 1920 a 50 per cent. increase in grade pay and many improvements in the conditions of life. Dr. Alfred Cox has informed us of the skill, courtesy, and determination with which Elliot conducted this successful campaign.

Elliot was a prolific writer and possessed a fine literary style. His wife, who was the daughter of Surgeon-General J. A. C. Hutchinson, helped him in the preparation of his books on ophthalmic subjects, and her death 12 years ago dealt him a blow from which he never fully recovered. In addition to books and papers on professional subjects he frequently contributed articles to *Blackwood's*. Whilst in India he interested himself in conjuring and became proficient himself: for many years he was chairman of the Occult Committee of the Magic Circle. Much of his knowledge of Indian magic is recorded in "The Myth of the Mystic East."

But outside medicine many people will remember Elliot best as founder and chairman of the British Health Resorts Association. This movement had its origin in a letter which he wrote to the *Times* after Lord Snowden's statement that £31,000,000 were being spent every year in health and pleasure resorts abroad with a hint that some at least of this money ought not to leave the country. This was exactly the kind of situation which appealed to Elliot's temperament and he threw himself at once into the formation of the Association with characteristic energy. His colleagues on the executive testify to his unselfish and wholly disinterested efforts on its behalf. Until recently he never missed a meeting of either the executive or the medical advisory committee and he took part in the conferences held in the different health resorts of the country. Elliot required indeed many outlets for his exceptional mental energy. Though extremely courteous in his manner, he could, on occasion, be very outspoken: the injuries inflicted by cataract couchers and other unqualified persons on the Indian public, and mysticism of any kind were matters on which he was easily roused.

The later years of his life were marred by ill health but despite much suffering he carried on with characteristic courage, and he died, as he wished, in full work, at the age of 72. He leaves three sons.

JOHN MAY HERBERT MUNRO, M.R.C.S., L.R.C.P., D.Sc.

THE death occurred on Nov. 6th at Bath of Dr. J. M. H. Munro, bacteriologist and a distinguished worker in chemical research connected with agriculture. He was born in 1855, obtained an exhibition in chemistry at the University of London, graduated in science, and obtained the D.Sc. in 1877. He became associated with Prof. John Wrightson and Mr. William Fream in the foundation of Downton College, the agricultural institution in Wiltshire which was started as a private venture. Munro worked particularly in association with Wrightson, a practical farmer, and out of their joint researches came important advances. We have received from a distinguished senior who was familiar with Munro's work in agricultural chemistry, the following estimate of it: "When I first heard of Munro he was a brilliant student and would, I fancy, have passed an examination in any branch of science to which he had turned his attention and he could, and in a measure did, adapt himself to different sciences. I think it may be said

that his fault was that he did not make enough of his work, for a lot of which he has never received credit and possibly a good deal of it has never come to light. It is now generally allowed that to him is due the real credit of discovering that basic slag, at that time a waste product of the steel industry, if ground fine, would prove a valuable material for the improvement of pasture. Also, to my knowledge, he did independent work in isolating the organisms playing a part in the formation of nodules in the roots of different ligneous plants. I always regarded him as a man of great ability who, from modesty and the omission to bring his work to the light, failed to obtain the scientific reward to which his work entitled him."

In 1886 Dr. Munro joined the medical school at Bristol, gaining an entrance scholarship held at the Bristol Royal Infirmary. He qualified as M.R.C.S., L.R.C.P., and in 1900 took special courses in bacteriology to the study of which he afterwards devoted himself. He became pathologist to the Royal Mineral Water Hospital at Bath in 1913 and public analyst for the city, and made communications to medical and scientific journals which showed the all-roundness of the equipment pointed to by his diplomas of F.I.C., F.C.S. In spite of his considerable age he had a mind which was both active and agile. For 22 years he was honorary pathologist at the Royal Hospital specially devoted to the care and investigation of rheumatic disease, and during this time the pathological laboratory under his direction grew apace. In 1913 barely one hundred investigations were performed in the year, whereas latterly estimations have run into several thousands each year. In his latest work he collaborated with Dr. Aldred-Brown and an interesting paper by them was published in THE LANCET in June, 1934, on the blood sedimentation-rate and the plasma proteins. Further work on the same subject in connexion with chronic rheumatic disorders appeared in the *Quarterly Journal of Medicine* in 1935.

Dr. Aldred-Brown writes: "Munro was a keen bacteriologist and his knowledge of chemistry was invaluable in tackling biochemical problems. As recently as two years ago he was still engaged in research in connexion with the blood plasma proteins and also with the radon emanation of radio-active springs. He was greatly admired by his colleagues for the uprightness of his character and his quiet, unassuming manner. His wife died two years ago and there can be little doubt that he never really recovered from the loss he sustained."

By the death of Dr. Munro scientific medicine has lost a valuable exponent.

ISABELLA MEARS, L.R.C.P.I.

Dr. Isabella Mears, who died at Whitehouse, Inveresk, Midlothian, on Nov. 11th, was one of the early pioneer medical women. She was born on Dec. 20th, 1853, the daughter of James Bartholomew, farmer, West Lothian. After training as a teacher she desired to undertake mission work abroad. Having this end in view, she was advised by the late Dr. Colin Valentine to obtain such medical education as was at that time available to women. With her father's whole-hearted support she went to London in 1875 and entered the School of Medicine for Women, just opened by Dr. Sophia Jex-Blake. The number of students was small and she had to fit into the curriculum of classes already in existence as best she could. Opportunities for clinical work there were almost none; the Royal Free Hospital was not yet open to women. A few beds in Dr. Garrett Anderson's hospital in Marylebone-road were available, and she seized the opportunity also of dispensary work in Seven Dials. Her midwifery experience was obtained in Dublin, where she had to take out her course along with the midwives. Amongst the lecturers at the school was Sharpey Schafer, whom she had the opportunity of meeting two weeks before his death and of exchanging reminiscences. Another lecturer was William Pope Mears, of London Hospital, who taught anatomy. In 1879 she married Dr. Mears. At that time no British qualification was open to women. Mrs. Mears went with her husband to Newcastle where he had been appointed to the Durham School of Medicine as anatomist. In 1881 she obtained the qualification L.K.Q.C.P.I., now L.R.C.P.I., the Royal College of Physicians of Ireland having opened their qualifying examinations to women. Her name was that of the twenty-fifth woman on the Medical Register.

She engaged in general practice in Tynemouth for nine years, when she and her husband decided to carry out their early intention of mission work abroad. They were in Foochow, China, under the Church Missionary Society, from 1890 to 1893, when they had to return on account of Dr. W. P. Mears's ill health. In 1895 she and her husband settled in Edinburgh for the education of their children. There in 1899 (as has been noted lately in a letter to the *British Medical Journal*) they opened at Woodburn, Edinburgh, one of the earliest sanatoria in Britain for the treatment of pulmonary tuberculosis after visiting Dr. Walther at Nordrach. Dr. W. P. Mears died in 1901 and his wife continued her work at Woodburn till 1922 when she retired.

In addition to her medical work Dr. Isabella Mears was deeply interested in Chinese religion and philosophy. Her translation of the Tao Teh King was published in 1916, and after she retired she studied and made a tentative translation of one of the most difficult and ancient of the Chinese classics —the Yih King, embodied in her book "Creative Energy" in 1931.

She is survived by two sons and two daughters, two of whom are in the medical profession.

HERBERT DOBIE, M.D. Edin.

THE death occurred on Nov. 14th of Dr. Herbert Dobie, a member of a family whose professional work in Chester and the neighbourhood is well known. Dr. Dobie was the son of the late Dr. W. M. Dobie who may be remembered as the medical attendant of Mr. Gladstone during his last illness at Hawarden Castle. He was educated at Marlborough and, proceeding to the University at Edinburgh, graduated as M.B., C.M. in 1889, proceeding later to the M.D. degree. He was for a time resident surgeon at the Royal Infirmary, Edinburgh, and did considerable post-graduate work in Vienna, Berlin, and Dresden before returning to Chester to coöperate in the family practice. Outside his medical work, Dr. Dobie was a well-known naturalist.

HARROGATE GENERAL HOSPITAL.—A new maternity block is to be added to this hospital for which £5000 has been raised by the Harrogate members of the National Council of Women. This sum is to be made up to £8000 by the county council and Harrogate town council. There will be four one-bed wards and two wards with four beds in each.

PARLIAMENTARY INTELLIGENCE

WORKMEN'S COMPENSATION

IN the House of Commons on Nov. 13th Mr. MAINWARING moved the second reading of the Workmen's Compensation Bill. Its objects, he said, were to broaden the legal definition of dependants, to ensure an adequate amount of compensation, to remove the administration of compensation from the present court procedure, and to create an independent compensation or accident fund. At present the intentions of Parliament were not being carried out and the existing Act was being administered by citative law. The courts were frequently dependent on medical opinion—he would not call it medical evidence. In certain types of case medical opinion was, no doubt, unavoidable, but in trade-union circles there was a suspicion that medical science was being prostituted in the courts. Medical men in compensation cases were taking precisely the same attitude that members of the legal profession did. The parties could get medical experts to say anything they wanted in their favour. There was an astounding freedom in the courts to experiment in so-called medical theory, and this applied to industrial disease even more than to industrial accident. Take nystagmus. He had heard medical men assert that no man could possibly suffer from it for more than four years. He had himself suffered from nystagmus in 1912, and he still suffered from it. Very few men recovered from it. But the terrible ramifications of the disease evidently passed the comprehension of medical men who to-day might be engaged by an employer, to-morrow by the workman, and on the third day might be engaged under the Act as a referee.

Mr. ERSKINE-HILL who moved the rejection of the Bill said that the measure would impose an intolerable burden upon industry.—Mr. FOOT said the main objection to the Bill was to be found in the clause which provided that the Board should have exclusive jurisdiction; it was, in effect, to be above the law. —Mr. ROWSON asked Mr. Foot and other lawyers to consider whether there were no circumstances under the present law when the workmen and the employers had no right of appeal. Were there no occasions when there was an agreed reference to a medical referee? The decision of a medical referee could not be upset, and there was machinery in this Bill for improving the position. They were not satisfied that the medical referee was always the most competent person to decide the future of the workman. When the medical referee certified a man to have totally recovered from nystagmus, he was thereby deprived of his right of getting employment. Very few cases were taken back into the industry.

Mr. CASSELLS said that the question of medical referees was dealt with in clause 28 which said "No action shall lie for the recovery of compensation, but all claims for compensation shall be heard and determined by the Board." That meant that the Board was accepting as its own particular responsibility the responsibility which meantime devolved upon medical referees. Were the Government satisfied with the system of medical referees as it existed at present? The referee was expected to be completely unbiased, but in practice the system was harsh on the workman's claims. The referee was often asked to sit in judgment on questions which should devolve upon a judge. In Scotland there were many doctors sitting as medical referees, and at the same time acting as medical advisers to insurance companies on behalf of employers. That was unfair to everyone concerned.

THE HOME OFFICE VIEW

Mr. GEOFFREY LLOYD said that in the industries which made returns to the Home Office some 400,000 claims were paid yearly under the Workman's Compensation Acts. On a reasonable calculation for all industries it was probable that between 500,000 and 600,000 claims for compensation occurred every year. The number of cases that came into court was certainly less than 2 per cent. and of the cases that came into court a number were settled outside. For example, in 1933 only 2514 cases had to be finally settled by the court, and of those nearly four-fifths were settled in favour of the workman. There were 16,000,000 persons covered by the Workman's Compensation Acts, and about £9,000,000 was paid yearly in compensation. The present system was therefore giving alleviation to large numbers of people in industrial disablement. There was, of course, room for improvement, but the points of grievance were not sufficient justification for this Bill. In so far as difficulties existed they could be dealt with in other and better ways. It was true that medical ideas about nystagmus had changed a good deal during the last generation, but it was difficult to think of any Act of Parliament which was not founded on the accepted medical ideas of the time. It was true that in the old days doctors considered that nystagmus was specifically an eye disease. The modern view was that although one aspect of the disease might take the physical form of oscillation of the eyes, there was a psychoneurotic illness which affected the whole personality and of which the oscillation was one expression. If the view was accepted—and he thought it was now to a considerable extent—it made the question of nystagmus from the points of view of compensation and of curing the men extremely difficult. In present circumstances there was a sort of vicious circle. A man got the disease, he was in a difficult general condition, he was taken off his work, and he was not likely to recover while he was drawing compensation (which was clearly much less than his wages) and while he was doing nothing and becoming more and more depressed. The employer, not unnaturally, realised that there was an added compensation risk in re-employing somebody when he either had nystagmus or might have had it and recovered from it to some extent. It seemed that the line of progress might be that of providing some form of suitable light work together with compensation, so as to relieve the man while he was suffering from the disease by taking him away from the conditions in which he could not possibly get a real cure. This problem was being thoroughly examined by the committee over which Judge Stewart presided.

There might be a case as to whether a medical referee should be employed in private practice, or whether he might on some occasions appear for employers or trade-unions and at the same time be a medical referee. But it must be remembered that it was necessary to have referees on the spot and of a high professional standard. In many districts there was not an unlimited supply of medical men; they had to be used for more than one purpose. In regard to the feeling whether it could be right for one man to make an absolute decision on a case, he thought the question of a right of appeal might be considered. That had already been referred to the Stewart Committee. The restoration to health of the injured workman was the most important aspect of the problem. There had been great developments recently, not only in new methods of treating fractures, but in knowledge of the psychological factors which affected recovery and there was at present a strong interdepartmental committee going into the whole subject.

But this Bill was a revolutionary measure. It would revolutionise the workman's compensation system by sweeping away the jurisdiction of the courts, by sweeping away the insurance companies and mutual indemnity associations, and by radically altering the medical arrangements. It would provide instead a small body of dictators uncontrolled by the ordinary law of the land, with the power to raise

levies from the employers at whatever rates they thought fit for the purpose of paying claims.

The motion for the second reading of the Bill was negatived by 115 to 109.

NATIONAL PHYSIQUE

Lord MOUNT TEMPLE'S question in the House of Lords on Nov. 10th, what steps the Government proposed to take to improve the physical fitness of the young people of this country, led to an important discussion. In Germany, or Italy, or, above all, in Sweden, he said, young people were far better equipped by physical health than in this country. The Secretary of State for War had said that if all the would-be recruits in 1935 had come up to the physical standard there would have been no deficiency in the Army. According to the War Office representative in 1935 47 per cent. of candidates for the Army had to be rejected though the standard of physical fitness for the Army was not very high. We had maternity care and a reduction in the infant death-rate, a very mixed blessing if the unfit were thereby being preserved, but no care was being taken of the physique of young people. Any plan to this end should be worthy of the object in view. The policy of compelling unemployed youths to attend evening continuation schools might well be carried further with the object of remedying their bodily defects. In his view any youth, whether employed or not, who could not pay for physical instruction, should be allowed to attend classes free of charge. It was a vital thing that the physical improvement of the people should be a continuation of the work done by the Board of Education.

TAKING STOCK OF IDEAS

Lord DAWSON said that this question was so big as to transcend in importance and in scope this or that political or social question. A time had arrived when we needed to take stock of our ideas and keep pace with events. It was surely a small view to take to expouse nutrition and depreciate physical education as certain bishops of late had done. Surely it was equally foolish to pretend that the human race could be independent of the laws of sound breeding.

It would be quite wrong, in his opinion, to say that this nation was a deteriorating one; but there were in our midst seeds of deterioration which might quickly be multiplied. In our elementary schools, say in London, the children as a whole were well nourished, well kept, bright, of good colour, and brimful of vitality with better promise of good teeth. Rickets was disappearing. The L.C.C. had indeed brought the physical education of its children to a more advanced stage than those in any other part of the country. On the other hand, adolescents —e.g., boys in the public schools, young men in factories or groups of hikers and territorials— often showed defects in their bodies which bade ill for their future health. It was true that the average boy and girl of to-day were taller and stouter and heavier than those of former generations, but mere bulk of frame was not evidence of fitness. Moreover, the demands on our race were increasing; if this nation was to maintain its leadership the physique of its race must go on improving.

To-day we were reaping not only the advantages of the progress of medical science and the operation of our social services, but also the disadvantages. A high birth-rate and a high death-rate, both adult and infant, brought about a substantial elimination of weaklings. Now that the death-rate was rising steadily, year by year, nature's method had been rendered nugatory. To-day that group of weaklings was not eliminated to anything like the same extent. They were given maintenance and treatment and were even able to marry on their maintenance allowance. We were preventing the death of the unfit as a result of our civilisation, but had not planned any adequate substitute; it seemed to Lord Dawson essential on the one hand to promote the fit, and on the other to take care of the inherently unfit and prevent them from vitiating the race. While securing for the child of average abilities every opportunity in the limited sphere of usefulness for which it was fit, it was important to push forward the better and the best. If, say, at the age of 15 children were tested, and those who passed through the sieve were tested again at 16 or 17, it would be well worth while to spend money in helping forward the filtrate. The testing of the fit at each stage should not be determined just by an examination or a mental test, but should include also a study of bodies and development and of character.

Another aspect of this question was the smaller families of to-day, families of fewer but fitter children. The mothers of those children were as well as, or even better than, those of any previous generation. It was the lower infant death-rate that had accounted in large measure for contraception. It was one thing to have twelve pregnancies and five children reared, and a very different thing to have twelve pregnancies and ten children reared. At the same time, from a national point of view, population must not become too small or our leadership in the world might easily be imperilled.

It was necessary to plan actively for a fit race. The fit citizens must be got to the forefront and leaders of youth must be secured to set the pace. But there was a residue of the inherently unfit which no environment, however favourable, would raise up to the level of good citizens. It was quite proper that these people should be preserved and should be given a kindly simple shelter, but no effort should be made to raise them above their biological level or there was a risk of vitiating the race by the increase of their defects. These defectives, whether they were physical, mental, or moral, if they happened to be the carriers of disease to descendants, or if they were undesirable parents, should be discouraged from reproduction and, where possible, be prevented from undertaking parentage. There was, for example, the tragedy of the bleeders, of hereditary blindness, inherited deformities of the hands, and cyclical insanity. There were 250,000 mental defectives in our community, sufficiently fit to hold their own economically, but unfit as parents. If one parent or two parents were defective the children were liable to be defective to the extent of one-third; and to the extent of one-half children would not be normally minded.

The medical profession were always being exhorted to think in terms of prevention, and they were more and more striving to do so. Why should they not use measures to prevent the birth of unwanted children who were a misery to themselves and to their parents and damaging to the race. In Lord Dawson's experience—and this was certainly true of the Western part of America—these people did not want to be parents; they knew that they were incapable of the responsibility and if they were of a higher standard of intelligence they were terrified of producing bad children for the race. It was only an accident that doctors at the present time had not the power of offering to these poor beings relief from the dangers of parentage. Several hundred years ago an awful practice of getting someone to maim a person to enable him to escape military service was met by a law against maiming which still existed. It was never meant to apply to any skilled profession, but it did. He suggested as a remedy simply that the medical profession be exempted from the terms of that ancient law and that they should be able to extend their powers of preventive treatment in such cases as they were asked to treat and where it was right to proceed. He would plead that in the months to come when this great question was being considered that it should be considered in all its bearings on the destiny of the race.

PLANNING FOR FITNESS

Lord HORDER said that Lord Dawson took a long view, a view that began with eugenic preparation for

physical and mental fitness, that planned for a continuation of that fitness, that concentrated on the plastic and trainable period of life, and on the importance of selecting those who could lead and so spread the gospel of fitness. It was a long road, but there was no short cut. What he said should be taken as supplemental to rather than substitutional for the ideal of Lord Dawson. Fitness for living and working, or fitness for fighting if it must be, could never be obtained by physical measures whether educational or recreative. More basic things—food, shelter, air, and leisure—were all essential to that rise in health and morale which was requisite. He trusted that measures already undertaken in promoting these benefits would be intensified and expedited.

Advertisement of what this nation had itself done in these directions would be wholesome for our self-respect and would be salutary reading for some other nations. But much remained to be done; there was need for more coöperation between Government departments. He preferred the word "food" to "nutrition." As one who was anxious to avoid the delays that exasperated he would say: "Look after the accessibility of food and nutrition will look after itself." He would like to see more coöperation on the question of food and its distribution between the Ministries of Health and of Agriculture, the Board of Trade, and why not the Ministry of Transport?

They could not really plan for improved fitness; even the best doctor could not make his patients healthy, and in Russia were to be seen some of the effects upon a nation of being more planned against than planning. He was not decrying forethought; he welcomed the promised Factories Bill. But his own lead would be that the Government should speed up all those social services upon the results of which depended the health and happiness of the people. Methods and the means of physical training might even emerge naturally, given health and contentment. Let the Government stimulate and subsidise existing institutions that centralised physical training and physical education, notably the Central Council of Recreative Physical Training. Finally, he hoped that they would not be regimented towards this object. If the people of Britain were given the modest requirements of security of sustenance their sturdy common-sense would do the rest. The word "democracy" had been debased but if he dare use it he would remind their lordships that democracy also advanced on its stomach.

THE FACTOR OF UNDER-NOURISHMENT

The ARCHBISHOP OF CANTERBURY wished to call attention to the danger lest the standard of nutrition should fall short of the bodily standard necessary for profiting by physical exercise or training. A standard of nutrition adequate for the ordinary school life was different from one adequate to withstand the strain of physical exercise, to say nothing of the extra hunger which exercise created. It was of great importance that children especially should be subjected to careful medical inspection before being put through physical exercises. Adolescents who had left school and needed even greater opportunities for physical training and recreation had not the advantage of receiving free meals or milk; and some of those most eager for physical training might not be sufficiently nourished to stand the strain. He hoped that further and fuller consideration would be given to a considered policy of food production in the country, food distribution, and not less food preparation.

The Earl of LISTOWEL was less optimistic than Lord Dawson about the prospects of scientific breeding as applied to human beings. He believed that we had not yet sufficient accurate knowledge of human heredity to be able to tell what people were best fitted to bring children into the world; geniuses had very often been born of very poor stock. It would be extremely dangerous if we were to adopt physical fitness as the criterion of fitness for parenthood. If the Government intended to face up to the problem of physical debility they must detect the root cause of this low standard of physical well-being and strike at that. And the root cause was surely malnutrition or undernourishment. He was not satisfied that the mere increase of facilities for physical training and recreation and sports would diminish very appreciably the appalling incidence of physical defects. Unless the Government were prepared to expand the social services in a bolder and more generous way the country would be faced for many years to come with a problem of profound anxiety.

THE GOVERNMENT'S INTENTIONS

Earl DE LA WARR, Under-Secretary of State for the Colonies, replying for the Government, said that the House was apparently agreed that there was need for a drastic attack on the health problems of this country, but that some progress had been made in the past and that there were at least some sound foundations on which to build. There was complete agreement that any policy brought forward must be comprehensive; if they followed only those who saw no problems but that of nutrition, or on the other, those who were interested mainly in physical training of a particular character, they were bound to have an incomplete policy. They had at a later stage to consider the fundamental points made by Lord Dawson. They were a long way from action on any of these points, because much more knowledge was required, but none the less these were fundamental questions affecting the future of our race.

Now for the first time there was going to be a real central comprehensive drive in all the fields of health at the same time. The Government's intention was to mobilise voluntary effort plus the local authorities and help and encourage them to give facilities for the promotion of greater health. It might be that legislation would be necessary for certain improvements of machinery and that aid of a financial character would have to be considered, but the basis of the scheme would rest on the local authorities and the existing voluntary organisations. They were convinced that if only they could provide playing fields and swimming pools and the right type of instructor they would be used. And on the subject of nutrition they were convinced that if the right food and the right knowledge were available immense strides could be made. The Government recognised that no health policy could be effective unless it was comprehensive, and proposed to deal further on the milk-in-schools scheme and with the question of nutrition. The Government intended to drive forward with all the force and imagination at their command.

Text of Scottish Midwives Bill

The Maternity Services (Scotland) Bill, of which the text has now been issued, places on every local authority the duty of providing a home service of trained midwives with liberty to compensate midwives who are too old or infirm to enter the service. Additional expenditure for the next five years is to be met by an Exchequer grant on a "unit" basis. The local authority will be entitled to recover fees in accordance with a scale to be approved by the Department of Health. Women may authorise payment to the local authority out of their maternity benefit under the National Health Insurance scheme.

QUESTION TIME

MONDAY, NOV. 16TH

Superannuation of Local Government Officers

Sir HENRY JACKSON asked the Minister of Health whether he could indicate the scope of the proposed Bill to deal with the superannuation of local government officers.—Mr. R. S. HUDSON replied: The Bill will be based generally on the recommendations of the Departmental Committee of 1927. The main object will be to secure that provision is made by all local authorities for the superannuation of their administrative, professional,

and clerical staff, in order to remove the bar to mobility to which the absence of a uniform superannuation system gives rise and which the committee unanimously regarded as unfavourable to the efficiency of the Local Government Service. These considerations do not apply with the same force to other members of the staffs of local authorities and it is proposed that the superannuation of these employees should remain a matter for the discretion of each local authority.

Recovery of Cost of Treatment of Infectious Diseases

Mr. THOMAS WILLIAMS asked the Minister of Health whether he was aware that some local authorities attempted to recover from patients the cost of their treatment in isolation hospitals for infectious diseases; by what authority were such costs recovered from local or other patients; whether he or his predecessors had made any pronouncement on the desirability or otherwise of recovering such costs; and whether, in view of the present practice of some authorities, he would make a pronouncement as to the undesirability of recovering such costs.—Mr. R. S. HUDSON, Parliamentary Secretary to the Ministry of Health, replied: The answer to the first part of the question is in the affirmative. The authority under which the costs of isolation hospital treatment are recovered by local authorities from patients is section 132 of the Public Health Act, 1875. No general pronouncement has been made by my right hon. friend or his predecessors regarding the desirability or undesirability of recovering such costs, but, in response to inquiries from individual local authorities, my right hon. friend has suggested that discretion should be exercised as undue insistence might tend to defeat the objects for which isolation hospitals are provided. My right hon. friend does not think that he would be justified in making any such general pronouncement as is suggested in the last part of the question.

Medical Examination of Spanish Immigrants

Mr. GALLACHER asked the Minister of Health whether it was upon instructions given by him to the immigration officer at Dover that a party of 14 Spanish citizens, travelling from Barcelona and passing in transit through England, were held for a medical examination; what was the purpose of so doing; and whether all persons sympathising with the Burgos insurgents were also subjected to such an examination when they visit this country.—Mr. R. S. HUDSON replied: Advice was recently given by my Department to the medical officers of health of Dover and of other ports and airports that, in view of the risk of the introduction of infectious disease into this country from Spain under present conditions, all travellers arriving at those ports who were known to have come from that country shall be medically inspected. The members of the party in question were accordingly referred to the medical inspector of aliens. It was ascertained that they did not intend to stay in this country but were in transit to Russia. They were consequently not medically examined, but were merely subjected to the ordinary routine medical inspection.

Silicosis and Asbestosis

Mr. ELLIS SMITH asked the Home Secretary if it was proposed to take steps to include silicosis and asbestosis in the industrial disease provisions of the Workmen's Compensation Acts.—Mr. GEOFFREY LLOYD, Under-Secretary, Home Office, replied: No, Sir. Special provisions were enacted by Parliament to enable compensation to be given for these diseases because the ordinary industrial disease provisions were not considered appropriate; and my right hon. friend knows of no reason for departing from the present arrangements.

Mr. ELLIS SMITH asked the Home Secretary if he would arrange for an exhibition to be held in Stoke-on-Trent of the section in the Industrial Museum that dealt with silicosis.—Mr. GEOFFREY LLOYD replied: My right hon. friend is fully alive to the advantages of local exhibitions, but he is doubtful whether the hon. Member's object would be best attained in the way he suggests. I am advised that the section in question, though it contains, of course, some exhibits dealing with silicosis and the potteries, is designed to afford a general illustration of the conditions giving rise to silicosis and the precautions to be observed, that would not be specially appropriate at Stoke. As the hon. Member is aware, the Home Office arranged for a special exhibition some years ago in connexion with the Wedgwood Centenary Exhibition and it would probably be more useful to arrange for some similar exhibition at Stoke at the first suitable opportunity.

Mr. THOMAS WILLIAMS asked the Home Secretary who was responsible for appointing members of the area medical boards to deal with silicosis cases; what special qualifications they possessed; the terms of their appointment; and whether any member of these medical boards could act for employers in other compensation cases.—Mr. GEOFFREY LLOYD replied: The area panels of the Medical Board are appointed by the Secretary of State. They are whole time salaried officers and are not free to act for employers or workmen. In a few districts in which cases occasionally arise and which are not conveniently served by the panels, special doctors are appointed to act in conjunction with a whole time member when necessary. The terms of appointment of these doctors would not preclude their acting for an employer or workman in some compensation case, but a report or certificate under the scheme cannot be issued except with the authority of at least two members of the Board. The special qualifications of the members consist partly of their previous experience of respiratory disease, in the light of which they are appointed, and partly in the knowledge and experience gained by constant examinations under the schemes in consultation with their colleagues.

THURSDAY, NOV. 12TH

Workmen's Compensation and Unemployment Relief

Mr. OLIVER asked the Minister of Labour whether lump sum settlements paid in respect of accidents under the Workmen's Compensation Acts were subjected to assessments for the purpose of computing the family income under the means test, or whether such sums were treated differently from other moneys not so obtained.—Mr. ERNEST BROWN replied: I am informed by the Unemployment Assistance Board that one-half of any lump sum paid to an applicant or a member of his household in commutation of weekly payments by way of workmen's compensation will be regarded as set off against the special needs or personal requirements of the owner. The remaining half is dealt with under the regulations in the same way as other capital assets.

Report on Miner's Nystagmus

Mr. THOMAS WILLIAMS asked the Home Secretary when the report of the Departmental Committee on Miner's Nystagmus will be available.—Sir JOHN SIMON replied: I understand that the committee have almost finished taking evidence and have commenced consideration of their report. I am afraid, however, that it is not possible to say at present when the report will be completed. The hon. Member will appreciate that the inquiry is not limited to miner's nystagmus, but covers also the important questions of the general medical procedure and arrangements under the Acts and the working of existing provisions and practice in regard to lump sum settlements.

Anti-poison Gas Instruction

Mr. MATHERS asked the Home Secretary what action had been taken with university authorities in general and Edinburgh in particular, in relation to anti-poison-gas instruction; whether this had been included in the curriculum as a compulsory subject by his order; what authority he had for such action; and whether it was intended to impose any penalty upon students who objected to take such a subject as part of their studies in the public health course.—Mr. GEOFFREY LLOYD, Under-Secretary, Home Office, replied: My right. hon. friend has appointed a number of medical instructors in anti-gas precautions who, amongst their duties, will give instruction to medical students in accordance with arrangements which have been made with the authorities of universities and medical schools. The question whether

this subject should be taught on a compulsory or voluntary basis is a matter entirely for the authorities responsible for medical education.

Mr. MATHERS: Are the hon. gentleman and the Home Secretary aware that apart from those students who think that to have this instruction is to give way to the idea that war is inevitable, there is a strong body of opinion that they are being in this way included in what may be described as the Government's military machine and that it is on that ground that the objection is raised to the compulsory nature of the instruction?

Vice-Admiral TAYLOR: Is it not in the public interest that such instruction should take place generally throughout the country?

No further answer was given.

Replying to Sir A. KNOX, Mr. LLOYD said that substantial stocks of components of a civilian gas respirator had already been produced, and they expected to get a large-scale assembly by next month. They expected the production of the Government factory to be running smoothly at the rate of 2,000,000 per month very shortly.

Card-room Workers and Respiratory Disease

Mr. SUTCLIFFE asked the Home Secretary if he could make any statement with regard to the position of the Home Office in respect of card-room dust, as a result of the recent deputation representing the card-room workers' amalgamation.—Sir JOHN SIMON replied: Yes, Sir. I have decided to set up a committee to explore the question whether a workable scheme can be devised for providing some compensation for card-room and certain other workers disabled by respiratory illness as indicated in the report of the Committee on Dust in Card-rooms.

Midwives Act: Local Supervising Authorities

Mr. GEORGE GRIFFITHS asked the Minister of Health if he would give the names of the local authorities which were now local supervising authorities under the Midwives Acts.—Sir KINGSLEY-WOOD replied: The local supervising authorities in England and Wales for the purposes of the Midwives Acts are the county councils, the county borough councils, and the councils of the following non-county boroughs or urban districts:—

Barking	Eccles	Lowestoft	Torquay
Bedford	Edmonton	Luton	Tottenham
Bromley	Gillingham	Nuneaton	Walthamstow
Cambridge	Guildford	Poole	Weymouth and
Cheltenham	Harrow	Scarborough	Melcombe Regis
Chesterfield	Hove	Stockton-on-Tees	Willesden
Colchester	Ilford	Stretford	Wimbledon
Darwen	Leigh	Swindon	
Ealing	Leyton		

Major HILLS asked the Minister of Health in how many cases he had refused applications from non-county boroughs for orders authorising the borough council to become the local supervising authority under the Midwives Acts, 1902–26, and how many such applications were supported by the county council; how many applications had been granted; what were the considerations that weighed with him in dealing with such applications; and whether he proposed to adhere to his promise that he would give sympathetic consideration to applications from the smaller local authorities to supervise midwifery in their areas.—Sir KINGSLEY-WOOD replied: Since the passing of the Local Government Act, 1929, applications of this kind have been submitted to my Department by the councils of 69 non-county boroughs. Forty-one have been refused, of which six were supported by the county council concerned, and 28 have been granted. In dealing with these applications the most important factor to which I have given consideration since the Midwives Act, 1936, came into operation is the number of whole-time midwives required for domiciliary midwifery in the non-county boroughs concerned. I can assure my hon. friend that the promise I made during the passage of the Midwives Bill will be adhered to and that these applications will be granted wherever the circumstances justify the setting up of a new local supervising authority.

Compulsory Pasteurisation of Milk

Mr. ROBERT MORRISON asked the Minister of Health whether, in view of the recent epidemic in Bournemouth which involved 500 cases of infection and 40 deaths, he proposed to take steps to make the pasteurisation of milk compulsory.—Sir KINGSLEY WOOD replied: I am of course fully aware of the facts of this case, but I cannot undertake to introduce legislation on the subject at the present time.

Sale of Fresh Skimmed Milk

Mr. CHARLES TAYLOR asked the Minister of Agriculture if he would make representations to the Milk Marketing Board so that the sale of fresh skimmed milk be permitted in this country, in view of the fact that large sales of foreign skimmed milk in tins were still permissible.—Mr. MORRISON replied: The Milk Marketing Board have not prohibited the sale of fresh skimmed milk. I understand that any person may purchase whole milk at the regional price, separate the cream, and sell the resulting skimmed milk in liquid form; but in such cases the Board are not prepared to allow to the purchaser a manufacturing rebate.

Milk for Nursing and Expectant Mothers

Mr. DREWE asked the Minister of Agriculture what progress had been made with the scheme for the supply of milk to nursing and expectant mothers and to children under school age in the Rhondda Valley at the reduced price of 2*d*. a pint.—Mr. MORRISON replied: The figures so far available indicate that satisfactory progress is being made with the scheme which my right. hon. friend who preceded me at the Ministry was able to announce on July 29th last. Up to Nov. 7th applications to participate in the scheme had been received in respect of 3673 persons, including 303 nursing mothers, 339 expectant mothers and 3031 children under five. Approximately 82,000 pints of milk were supplied under the scheme in October. I understand that the Milk Marketing Board intend to make a special survey of the working of the scheme at the end of this year, when it is hoped that further information will be available.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 7TH, 1936

Notifications.—The following cases of infectious disease were notified during the week: Small pox, 0; scarlet fever, 2347; diphtheria, 1265; enteric fever, 19; pneumonia (primary or influenzal), 713; puerperal fever, 36; puerperal pyrexia, 108; cerebro-spinal fever, 10; acute poliomyelitis, 14; encephalitis lethargica, 6; dysentery, 14; ophthalmia neonatorum, 83. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 13th was 3102, which included: Scarlet fever, 1167; diphtheria, 925; measles, 22; whooping-cough, 332; puerperal fever, 14 mothers (plus 9 babies); encephalitis lethargica, 286; poliomyelitis, 3. At St. Margaret's Hospital there were 15 babies (plus 5 mothers) with ophthalmia neonatorum.

Deaths.—In 122 great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 6 (0) from measles, 2 (1) from scarlet fever, 13 (1) from whooping-cough, 32 (2) from diphtheria, 32 (20) from diarrhœa and enteritis under two years, and 35 (11) from influenza. The figures in parentheses are those for London itself.

Bournemouth reported the only fatal case of enteric fever. Birmingham and Stoke-on-Trent each had 3 deaths from measles; Nottingham 3 from whooping-cough. Fatal cases of diphtheria were reported from 23 great towns; Liverpool 3.

The number of stillbirths notified during the week was 269 (corresponding to a rate of 40 per 1000 total births), including 39 in London.

KING'S COLLEGE HOSPITAL.—The Duke and Duchess of York visited this hospital on Nov. 4th and the Duchess received purses containing over £3000 towards the £34,000 which is required to complete the new nurses' home. Renovations to the existing quarters will cost a further £3000, and £7000 is also needed for the maids' floor.

MEDICAL NEWS

University of Cambridge

On Nov. 13th the following degrees were conferred :—

M.D.—B. P. Harris and B. W. S. Mackenzie.
M.B., B.Chir.—J. W. D. Bull, J. M. Barnes, and G. T. Pitts.
M.B.—J. S. Ross and S. F. L. Dahne.

University of London

Mr. Girling Ball has been elected dean of the faculty of medicine of the University for the period 1936–38.

University of Adelaide

Dr. Frank Goldby, lecturer in anatomy at the University of Cambridge, has been appointed professor of anatomy and histology at this university.

University of Sheffield

The following external examiners have been appointed : anatomy, Prof. D. M. Blair ; physiology, Prof. H. S. Raper, F.R.S. ; medicine and therapeutics, Prof. J. W. McNee ; surgery, Prof. G. E. Gask ; pathology and bacteriology, Prof. J. H. Dible ; pharmacology, Prof. A. D. Macdonald ; obstetrics and gynæcology, Prof. D. Dougal ; public health, Prof. J. J. Jervis ; and forensic medicine, Prof. J. Glaister.

Royal College of Surgeons of England

A meeting of the council was held on Nov. 12th with Sir Cuthbert Wallace, the president, in the chair. It was reported that at the recent primary examination for the fellowship 199 candidates presented themselves, of whom 67 were successful. Arrangements have now been made for the laboratories of the Imperial Cancer Research Fund to be removed from Queen-square to Mill Hill. Mr. G. M. Hills, B.Sc., of the Middlesex Hospital, had been awarded a Mackenzie-Mackinnon research fellowship. The museum will be closed for a period in connexion with the reconstruction of the research laboratories. Permission was granted to the Society of British Neurological Surgeons to hold its next meeting in London in January at the College.

A diploma of fellowship was granted to R. K. Magee of the University of Toronto and St. Bartholomew's Hospital, and diplomas of membership to the candidates named on p. 1126 of our issue of Nov. 7th as receiving the L.R.C.P. Diplomas in public health and in child health were also granted jointly with the Royal College of Physicians to the candidates mentioned on the same page.

At the recent primary examination for the fellowship of the College, the following candidates were successful in the subjects of anatomy and physiology :—

J. R. Armstrong, M.B. Belf., Middlesex and Univ. Coll. ; B. Bandyopadhyaya, M.B. Calcutta, Univ. Coll. and Middlesex ; J. R. Belcher, St. Thos. ; A. D. Bell, Guy's ; A. J. S. Bell Tawse, Camb., Univ. Coll., and Middlesex ; R. Bewick, M.B. Glasg., F.R.C.S. Edin., King's Coll. ; H. E. Blake, B.Chir. Camb., Univ. Coll. ; H. A. C. Chalmers, King's Coll. and Middlesex ; J. L. Collis, M.B. Birm., Middlesex ; D. M. Cooper, M.B. Lond., Oxon. and St. Thos. ; J. O. Corbin, M.B. Adelaide, Univ. Coll. and Middlesex ; J. V. Crawford, Lond. ; J. K. Cunninghame, M.B. N.Z., Middlesex and Univ. Coll. ; A. W. Douglas, M.B. N.Z., Middlesex and Univ. Coll. ; F. L. Dyson, Univ. Coll. ; A. B. Evans, L.R.C.P. Lond., Camb., Middlesex, and St. Mary's ; H. Freeman, L.R.C.P. Lond., St. Mary's and Middlesex ; F. N. Glover, Guy's ; J. A. S. Green, St. Thos. ; A. D. M. Greenfield, St. Mary's ; D. W. Guthrie, M.B. N.Z., Middlesex and Univ. Coll. ; H. Haggag, M.D. Berlin, Cairo, St. Bart.'s, and Middlesex ; H. G. Hanley, L.R.C.P. Lond., Liverp. ; B. J. Harries, Univ. Coll. and Middlesex ; P. F. J. Hickinbotham, Birm. ; J. H. Hicks, Birm. ; F. D. Hindmarsh, Durham ; J. W. Horsley, M.B. N.Z., Middlesex ; A. Innes, B.Chir. Camb., St. Bart.'s and Univ. Coll. ; I. M. Jackson, Camb. and Lond. ; J. A. R. Johnson, M.B. Birm., Middlesex ; A. R. K. Kelly, M.B. Melb., Univ. Coll. and Middlesex ; J. Lannon, M.B. W'rand., Middlesex and Univ. Coll. ; J. K. McCollum, M.B. Belf., Middlesex ; J. MacHale, Dublin, St. Bart.'s, and Middlesex ; E. W. McMechan, M.B. Belf. ; J. W. Magladery, M.D. Toronto, Oxon. ; M. Makeen, M.B. Cairo, Middlesex and Lond. ; B. T. H. Marteinsson, M.D. Manitoba, Middlesex ; G. A. Matthews, Middlesex and Univ. Coll. ; G. M. Mes, Cape and Lond., Arts Amsterdam ; N. A. Neville, Oxon. and Guy's ; E. D. E. E. O'Brien, M.B. Melb., Univ. Coll. and Middlesex ; R. Orgias, M.B. N.Z., Middlesex and Univ. Coll. ; L. I. Parton, M.B. N.Z. ; R. M. Paton, M.B. Lond., St. Thos. ; E. L. Patterson, M.B. Manch. ; F. R. Philps, Univ. Coll. ; T. G. Pritchard, Guy's ; W. L. L. Rees, Univ. Coll., Cardiff ; J. E. Richardson, Lond. ; P. Smith, St. Thos. ; C. F. V. Smout, M.B. Birm. ; M. Sofer-Schreiber, M.B. Sydney, Univ. Coll. and Middlesex ; I. Spiro, L.R.C.P. Lond., Univ. Coll. and St. Mary's ; B. E. C. Stanley, St. Mary's ; M. G. Talwalkar, M.B. Bombay, St. Bart.'s ; L. J. Temple, Univ. Coll. ; R. G. Thomas, Oxon. and Guy's ; R. N. Traquair, M.B. Edin., Camb. and Univ. Coll. ; N. M. Vora, M.B. Bombay, Lond. ; J. S. H. Wade, Camb. and Univ. Coll. ; C. F. H. Wiessner, Camb. and Middlesex ; A. F. Williams, Manch. ; A. E. Williams, M.B. Wales, Cardiff ; R. E. O. Williams, Univ. Coll. ; and S. C. Williams, M.B. Sydney, Middlesex and Univ. Coll.

British Health Resorts Association

Lord Meston, the president, will take the chair at the annual meeting of this association to be held at the Institute of Hygiene, 28, Portland-place, London, W., at 4.30 P.M., on Friday next, Nov. 27th.

Pharmaceutical Society of Great Britain

A meeting of this society will be held at 8.30 P.M., on Tuesday, Dec. 1st, at University College, London, W.C., at which Mr. J. Davidson Pratt, secretary and general manager of the Association of British Chemical Manufacturers, will speak on the defence of the civil population against gas.

THE air-raid precautions department of the Home Office have moved to their new premises in Horseferry House, Thorney-street, London, S.W.1, and should be addressed there in future.

A Medical Officer's Portrait

A portrait of Dr. James Gairdner has been presented to the town council of Crieff by an anonymous donor. Dr. Gairdner has been medical officer to the burgh since 1880.

Medical Congress in Vienna

In celebration of its centenary the Gesellschaft der Aerzte in Wien is holding a post-graduate course at the University of Vienna from May 19th to 29th. A detailed programme will be issued shortly by the Kursbüro der Wiener medizinischen Fakultät, Allgemeines Krankenhaus, Alserstrasse 4, Vienna IX.

Kensington Medical Society

Dr. G. Roche Lynch is speaking at the first meeting of this society which will be held at St. Mary Abbots Hospital, Marloes-road, W. An announcement will be found in our Medical Diary, and Dr. B. Barling, who is the hon. secretary of the society, may be addressed at the hospital.

Demonstrations of Contraceptive Technique

On Wednesday, Dec. 2nd, at 2.30 P.M., at the clinic of the Society for Constructive Birth Control, a practical demonstration of the technique of the use of a variety of contraceptive methods will be given by Mrs. Marie Stopes, D.Sc., and Dr. Evelyn Fisher. Medical practitioners and senior students may apply for tickets to the hon. secretary of the society, 108, Whitfield-street, London, W.1.

London Jewish Hospital Medical Society

The annual dinner of this society will take place on Sunday, Dec. 6th, at the Trocadero Restaurant, when Mr. Arnold Sorsby, the president, will be in the chair. Lord Snell will be the principal guest, and the Marquess of Reading will propose the toast in his honour. The hon. general secretary, Dr. Max Sorsby, may be addressed at the London Jewish Hospital, Stepney Green, E.1.

Research Fellowships in Tropical Medicine

The Medical Research Council, on the advice of their Tropical Medical Research Committee, have awarded senior fellowships to Dr. Frederick Murgatroyd, lecturer in the Liverpool School of Tropical Medicine, and Dr. Cecil Hackett, recently engaged in investigations in the Northern Territory of Australia. They are tenable for three years, for investigations to be made mainly in the tropics. Dr. Murgatroyd will work in West Africa on the chemotherapeutic treatment of trypanosomiasis, and Dr. Hackett in East Africa on the pathology and clinical manifestations of yaws. Junior fellowships have been awarded to Dr. G. B. Ludlam, clinical assistant at the Sheffield Royal Hospital, and Dr. J. N. Strauss, formerly house physician at the Hospital for Tropical Diseases, London.

Sir John Davidson, M.P., has accepted the presidency of the Hospital for Epilepsy and Paralysis, Maida Vale.

Royal Northern Hospital, London

At the dinner held in connexion with this hospital, donations amounting to nearly £33,000 in addition to £52,500 previously subscribed were announced.

Fellowship of Medicine and Post-Graduate Medical Association

Courses for M.R.C.P. candidates include chest diseases at the Brompton Hospital (two evenings weekly at 5 P.M. from Dec. 9th to Jan. 8th); chest and heart diseases at the City of London Hospital, Victoria Park (two evenings weekly, at 6 P.M., from Dec. 7th to Jan. 8th). Sir Walter Langdon-Brown will give the first of a series of lectures of endocrinology on Monday, Nov. 23rd, at 8.30 P.M., at the National Temperance Hospital. He will deal with the integration of the endocrine system.

Manchester Hospitals and Air Raid Precautions

At the request of the city council the Manchester joint hospitals advisory board has considered the use of hospitals in connexion with the council's scheme for service in case of air raid. The joint board has now approved in principle a scheme for regarding the voluntary hospitals in the centre of the city as casualty clearance stations to which injured persons should be taken in the first instance. Should they require continued hospital treatment they would be moved out to the base hospitals provided at Booth Hall, Crumpsall and Withington hospitals, supplemented by the use of school premises at Moston and Wythenshawe. The various special hospitals are asked to provide the equipment for adequate first-aid treatment when used as clearing stations, and at least one portion of every hospital should be immune from the infiltration of gases. The hospitals council has been asked to appoint members to confer with the subcommittee of the city council on details of organisation and finance.

Vacancies

For further information refer to the advertisement columns

Aberdeen Royal Infirmary.—Hon. Jun. Asst. Surgeon for Ear, Nose, and Throat Dept.

All Saints' Hospital, Austral-street, West-square, S.E.—Hon. Surg. Reg. Also Res. H.S., at rate of £100.

Ayr County Council.—Obstetrician, £700.

Bath, Royal United Hospital.—Res. O., £150.

Bedford County Hospital.—Second H.S., at rate of £150.

Belfast, Royal Maternity Hospital.—Res. H.S., at rate of £100.

Birmingham, Selly Oak Hospital.—Res. Ear, Nose, and Throat Surgeon, £700. Also Jun. M.O.'s, each at rate of £200.

Board of Control.—Commissioner, £847.

Brighton, Royal Alexandra Hospital for Sick Children.—H.S., £120.

Brighton, Royal Sussex County Hospital.—H.S. and Cas. H.S., £150 and £120 respectively. Also Hon. Med. Reg.

British Postgraduate Medical School, Ducane-road, W.—First Asst. in Obstet. Dept., £300–£500.

Cardiff Royal Infirmary and Welsh National School of Medicine.—Hon. Dermatologist and M.O. for V.D. Centre, £250, &c.

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Res. H.S., at rate of £75.

Chelsea Hospital for Women, Arthur-street, S.W.—Jun. H.S., at rate of £100.

Chester, County Mental Hospital.—Jun. Asst. M.O., £350.

City of London Maternity Hospital, City-road, E.C.—Jun. Res. M.O., at rate of £80.

Croydon General Hospital.—Hon. Asst. Surgeon to Ear, Nose, and Throat Dept.

Dreadnought Hospital, Greenwich, S.E.—Receiving Room Officer, at rate of £200. Also H.P. and H.S., each at rate of £110.

Durham County Council.—Asst. Welfare M.O., £500.

Eastbourne, Royal Eye Hospital, Pevensey-road.—H.S., £100.

East Ham Memorial Hospital, Shrewsbury-road, E.—H.S. to Spec. Depts., and Cas. O., at rate of £120.

Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—H.P., First and Second H.S., also Obstet. Asst., each at rate of £50.

Gloucestershire County Council.—M.O., £800.

Hampstead General and N.W. London Hospital, Haverstock-hill, N.W.—H.S. Also Cas. M.O. and Cas. Surg. O. for Out-Patient Dept., each at rate of £100.

Hertford County Hospital.—Hon. Asst. Ophth. Surgeon.

Hospital for Tropical Diseases, Gordon-street, W.C.—H.P., at rate of £120.

Hospital for Women, Soho-square, W.—Res. M.O., at rate of £100.

Hospital of St. John and St. Elizabeth, 60, Grove End-road, N.W.—Anæsthetist.

Indian Medical Service.—Commissions.

Institute of Medical Psychology, Malet-place, W.C.—Diagnostic Physician.

Isleworth, West Middlesex County Hospital.—Asst. M.O., £400.

Kent County.—Asst. Pathologist, £700.

L.C.C.—Part-time M.O., at rate of £260.

Leicester City General Hospital.—Res. M.O., at rate of £300.

London University.—Geoffrey Duveen Studentship, £450.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Res. Surg. O. for Ear, Nose, and Throat Dept., £200.

Manchester Royal Eye Hospital.—Jun. H.S., £120.

Manor House Hospital, Golders Green, N.W.—Jun. M.O., £200.

Marie Curie Hospital, 2, Fitzjohn's-avenue, N.W.—Res. M.O., £100.

Newport, Mon., Royal Gwent Hospital.—Res H.P., at rate of £150.

Northwood, Middlesex, Mount Vernon Hospital.—H.S., £150.

Perth County and City Royal Infirmary.—Hon. Acting Surgeons to Ophth. Dept. and Ear, Nose, and Throat Dept.

Preston and County of Lancaster Royal Infirmary.—Asst. Pathologist, £650.

Prince of Wales's General Hospital, N.—Hon. Clin. Assts. to Spec. Depts.

Princess Elizabeth of York Hospital for Children, Shadwell, E.—Res. M.O., £200. Also H.S. and Cas. O., each at rate of £125.

Queen Mary's Hospital for the East End, E.—Hon. Asst. Phys. for Children's Dept. Res. M.O. and two Cas. and Out-patients O.'s, each at rate of £150. Also H.S. and H.P.'s to Spec. Depts., each at rate of £120.

Queen's Hospital for Children, Hackney-road, E.—H.P. and Cas. O., each at rate of £100.

Redhill, Surrey, Royal Earlswood Institution.—Jun. Asst. M.O., at rate of £250.

Rochdale Infirmary and Dispensary.—H.P., £150.

Rochester, St. Bartholomew's Hospital.—Cas. O., at rate of £150.

Royal Free Hospital, Gray's Inn-road, W.C.—Half-time Reg. for Ear, Nose, and Throat Dept., first H.S., Med. and Surg. Regs., each £200, Res. Cas. O., at rate of £150. Dist. Obstet. Asst., and Gynæcological Reg., each at rate of £100. Also Res. Anæsthetist in Obstet. and Gyn. Unit, at rate of £75.

Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.S., at rate of £100. Also Hon. Surg. Reg. and Hon. Clin. Asst.

St. Mary's Hospital for Women and Children, Plaistow, E.—Hon. Asst. Physician.

St. Mary's Hospital, W.—Med. Reg., £200. Also Cas. H.P., at rate of £150.

St. Peter's Hospital for Stone, Henrietta-street, W.C.—4th Anæsthetist, £25.

Seamen's Hospital Society, Greenwich.—H.S. for Tilbury Hospital, at rate of £140.

Sheffield Royal Hospital.—Whole-time Clin. Asst. to Ear, Nose, and Throat Dept., £300.

Southampton, Royal South Hants Hospital.—Cas. O., H.P., and two H.S.'s, each at rate of £150.

Sunderland Royal Infirmary.—Two H.S.'s and H.P., each £120.

Weir Hospital, Grove-road, Balham, S.W.—Sen. Res. M.O., £200.

West London Hospital, Hammersmith-road, W.—Cas. O., £250. Also H.P. and two H.S.'s, each at rate of £100.

Westminster Hospital, Broad Sanctuary, S.W.—Hon. Clin. Asst. to Gynæcological Dept. Also Asst. Surgeon.

Wickford, Essex, Runwell Hospital for Mental and Nervous Disorders.—Sen. Physician, £550.

Willesden General Hospital, Harlesden-road, N.W.—Med. Reg., at rate of £50.

Wolverhampton and Midland Counties Eye Infirmary.—H.S., £150.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Whitstable (Kent), Keynsham (Gloucester), and Market Deeping (Lincoln).

Births, Marriages, and Deaths

BIRTHS

MACLEOD.—On Nov. 13th, to Lesley, wife of Douglas MacLeod, F.R.C.S. Eng., of 18 Harley-street—a son.

SNELL.—On Nov. 9th, at Kingsley Way, N., the wife of Dr. W. E. Snell, of a son.

WILSON.—On Nov. 15th, at Harrow-on-the-Hill, the wife of Dr. Henry Wilson, of a daughter.

MARRIAGES

KELLNER—HAWES.—On Nov. 12th, at Kensington, Andrew Kellner, M.D., to Florence Dorothy Hawes, M.R.C.S., daughter of Mr. Spencer Hawes, of Reading.

MERER—MACINNES.—On Nov. 7th, at Christ Church, Hampstead, Dudley Merer, of Wembley Park, to Joyce MacInnes, M.B., B.S. Palestine, of St. Luke's Hospital, Hebron.

WILKINS—WITHERS.—On Nov. 14th, at Llanfechain Parish Church, Walter Wilkins, M.R.C.S., to Sophia Nesta Withers, of West Derby, Liverpool.

DEATHS

CONNOR.—On Nov. 16th, very suddenly, at Uplands, Hythe, Kent, Col. John Colpoys Connor, C.M.G., late R.A.M.C., aged 69.

DOBIE.—On Nov. 13th, at Chester, Herbert Dobie, M.B.E., M.D. Edin., aged 71 years.

NORTON.—On Nov. 12th, at Fowey, Cornwall, John Joseph Norton, L.R.C.S.I., aged 79 years.

SOPER.—On Nov. 12th, at Anerley-road, S.E., Arthur Walrond Soper, M.R.C.S. Eng.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths

Medical Diary

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY, Nov. 23rd.
Odontology. 8 P.M. Mr. A. T. Marston: Observations on the Piltdown Canine. Mr. W. E. Herbert and Mr. A. R. F. Thompson: Research on Gold Casting.
TUESDAY.
Medicine. 5 P.M. Dr. Mervyn Gordon, F.R.S.: The Ætiology and Diagnosis of Lymphadenoma. Dr. E. C. Warner and Dr. G. E. Vilvandré will also speak.
WEDNESDAY.
Comparative Medicine. 5 P.M. Dr. P. H. Manson-Bahr: Comparative Medicine and its Relation to the Study of Tropical Disease. Dr. G. M. Findlay and Dr. F. O. MacCallum: Immune Bodies to Yellow Fever in the Blood of African Animals. Mr. E. L. Taylor: An Example of the Value of Morphology in Medico-biological Investigation.
THURSDAY.
Urology. 8.30 P.M. 1. Tumour of the Kidney. 2–3. Tumours in the Ureter. 4. Non-malignant Tumours Necessitating Nephrectomy. 5. Papillomata of the Kidney and Ureter due to Bilharziasis. 6. Papillomata of the Kidney and Ureter. 7. Renal Growths. 8. Adenoma of Kidney. 9. Adenocarcinomata of Kidney. 10. Kidney Showing (*a*) Calculous Pyonephrosis, (*b*) Papilloma and Carcinoma, (*c*) Massive Hæmorrhage. 11. Grawitz Tumour of Kidney of Unusually Low Malignancy. 12. Papilloma of Ureter, Showing also Intussusception. 13–15. Renal Tumours Successfully Removed from Females aged 3 months, 44 years, and 14 years.
FRIDAY.
Disease in Children. 5 P.M. (Cases at 4.30 P.M.) Dr. R. H. Dobbs (introduced by Mr. Harold Edwards): 1. Acute Duodenal Obstruction in a Child of Nine Months; Recovery following Operation.
Epidemiology and State Medicine. 8.15 P.M. Dr. L. P. Lockhart: Industrial Influences on the Development of State Medicine.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.
WEDNESDAY, Nov. 25th.—3 P.M. (1, Wimpole-street, W.), Sir Walter Langdon-Brown: The Biology of Social Life. (Maudsley lecture.)

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.
MONDAY, Nov. 23rd.—8 P.M., clinical evening.

MEDICO-LEGAL SOCIETY.
THURSDAY, Nov. 26th.—8.30 P.M. (Manson House, 26, Portland-place, W.), Dr. W. G. Barnard: The Medico-Legal Institute.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Thornhaugh-street, W.C.
Fever Hospital Medical Service Group.
FRIDAY, Nov. 27th.—4.15 P.M., Dr. D. Sage Sutherland: Certain Aspects of Administration in Connexion with Small Fever Hospitals.

BRITISH PSYCHOLOGICAL SOCIETY.
Medical Section.
WEDNESDAY, Nov. 25th.—8.30 P.M. (1, Wimpole-street, W.), Dr. E. Guttmann (in collaboration with Dr. W. S. Maclay): Some Clinical Observations on Schizophrenic Drawings.

KENSINGTON MEDICAL SOCIETY, St. Mary Abbots Hospital, Marloes-road, W.
TUESDAY, Nov. 24th.—9 P.M., Dr. G. Roche Lynch: (1) The Toxicology of the Barbiturates. (2) Recent Work in the Investigation of Cases of Disputed Paternity.

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY, 5, Lisle-street, W.C.
WEDNESDAY, Nov. 25th.—4.30 P.M., Clinical Cases. 5 P.M., Dr. S. Cochrane Shanks: Problems of Dosage in Skin X Ray Therapy.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL INSTITUTION, 21, Albemarle-street, W.
FRIDAY, Nov. 27th.—9 P.M., Prof. E. Mellanby, F.R.S.: Recent Advances in the Treatment of Disease.

CHADWICK LECTURE.
TUESDAY, Nov. 24th.—5.15 P.M. (B.M.A. House, Tavistock-square, W.C.), Sir Francis Fremantle: The Doctor's Mandate in Parliament.

INSTITUTE OF HYGIENE, 28, Portland-place, W.
WEDNESDAY, Nov. 25th.—3.30 P.M., Dr. J. Browning Alexander: The Prevention of Respiratory Diseases.

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane-road, W.
MONDAY, Nov. 23rd.—2.30 P.M., Dr. R. D. Lawrence: Diabetes and Diseases of Pancreas.
TUESDAY.—2 P.M., Prof. E. H. Kettle, F.R.S.: pathological demonstration.
WEDNESDAY.—Noon, clinical and pathological conference (medical). 2.30 P.M., clinical and pathological conference (surgical). 4.30 P.M., Prof. S. P. Bedson, F.R.S.: Virus Diseases.
THURSDAY.—2.30 P.M., Dr. Duncan White: radiological demonstration. 3.30 P.M., Mr. G. F. Gibberd: Toxæmias of Pregnancy.
FRIDAY.—2 P.M., operative obstetrics. 2.30 P.M., Prof. John Fraser: Acute Surgical Infections of Bone. 3 P.M., department of gynæcology, pathological demonstration.
Daily, 10 A.M. to 4 P.M., medical clinics, surgical clinics or operations, obstetrical and gynæcological clinics or operations.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, Nov. 23rd.—10 A.M., skin clinic. 11 A.M., surgical wards. 2 P.M., operations, surgical and gynæcological wards, medical, surgical, and gynæcological clinics. 4.15 P.M., Dr. Archer: biochemical demonstration.
TUESDAY.—10 A.M., medical wards. 11 A.M., surgical wards. 2 P.M., operations, medical, surgical, and throat clinics. 4.15 P.M., Mr. Neil Sinclair: Surgery of Gastric and Duodenal Ulcer.
WEDNESDAY.—10 A.M., children's ward and clinic. 11 A.M., medical wards. 2 P.M., gynæcological operations, medical, surgical, and eye clinics. 4.15 P.M., Dr. Redvers Ironside: Skeletal Muscle—Its Anatomy and Physiology.
THURSDAY.—10 A.M., neurological and gynæcological clinics. Noon, fracture clinic. 2 P.M., operations, medical, surgical, genito-urinary, and eye clinics. 4.15 P.M., venereal diseases.
FRIDAY.—10 A.M., medical wards, skin clinic. Noon, lecture on treatment. 2 P.M., operations, medical, surgical, and throat clinics. 4.15 P.M., Dr. Archer: biochemical demonstration.
SATURDAY.—10 A.M., children's and surgical clinics. 11 A.M., medical wards.
The lectures at 4.15 P.M. are open to all medical practitioners without fee.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Nov. 23rd, to SUNDAY, Nov. 29th.—LONDON LOCK HOSPITAL, 91, Dean-street, W., afternoon course in venereal diseases (open to non-members).—ST. JOHN'S HOSPITAL, 5, Lisle-street, W.C., afternoon course in dermatology (open to non-members).—BROMPTON HOSPITAL, S.W., Sat. and Sun., course in chest diseases.—NATIONAL TEMPERANCE HOSPITAL, Hampstead-road, N.W., Tues. and Thurs., 8 P.M., M.R.C.P. clinical and pathological course.—NATIONAL TEMPERANCE HOSPITAL, Hampstead-road, N.W., Mon., 8.30 P.M., Sir Walter Langdon-Brown: The Integration of the Endocrine System; Wed., 8.30 P.M., Dr. Levy Simpson: Pituitary Glands; Fri., 8.30 P.M., Dr. H. Gardiner-Hill: Thyroid.
Courses and lectures are open only to members of the fellowship.

LONDON SCHOOL OF DERMATOLOGY, 5, Lisle-street, W.C.
TUESDAY, Nov. 24th.—5 P.M., Dr. R. T. Brain: Virus Diseases of the Skin.
THURSDAY.—5 P.M., Dr. J. L. Franklin: Bullous Eruptions.

HOSPITAL FOR SICK CHILDREN, Great Ormond-st., W.C.
WEDNESDAY, Nov. 25th.—2 P.M., Mr. Eric Lloyd: Congenital Dislocation of the Hip. 3 P.M., Dr. D. N. Nabarro: Syphilis of the Second and Third Generations.
Out-patient clinics daily at 10 A.M. and ward visits at 2 P.M.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.
THURSDAY, Nov. 26th.—3 P.M., Dr. Wilfred Harris: Clinical Demonstration.

NATIONAL HOSPITAL, Queen-square, W.C.
MONDAY, Nov. 23rd.—3.30 P.M., Dr. Hinds Howell: The Meninges and Cerebro-spinal Fluid.
TUESDAY.—3.30 P.M., Dr. Critchley: Aphasia, Apraxia, &c.
WEDNESDAY.—3.30 P.M., Dr. Kinnier Wilson: Clinical Demonstration.
THURSDAY.—3.30 P.M., Dr. Riddoch: Epilepsy and its Variants.
FRIDAY.—3.30 P.M., Dr. Purdon Martin: The Cranial Nerves.
Out-patient clinic daily at 2 P.M.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, N.W.
WEDNESDAY, Nov. 25th.—4 P.M., Dr. H. Courtney Gage: X Ray Therapy, Yesterday, To-day, and To-morrow.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Nov. 27th.—4 P.M., Mr. W. A. Mill: Diagnosis of Sinusitis.

ST. PAUL'S HOSPITAL, Endell-street, W.C.
WEDNESDAY, Nov. 25th.—4.30 P.M., Mr. Claude H. Mills: Some Interesting Urological Cases.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James's Hospital, Ouseley-road, S.W.
WEDNESDAY, Nov. 25th.—4 P.M., Mr. V. Z. Cope: Demonstration of Surgical Cases.

ST. JOHN CLINIC AND INSTITUTE OF PHYSICAL MEDICINE, 42, Ranelagh-road, S.W.
FRIDAY, Nov. 27th.—4.30 P.M., Dr. Francis Bach: Rheumatic Affections involving the Non-articular System.

MANCHESTER ROYAL INFIRMARY.
TUESDAY, Nov. 24th.—4.15 P.M., Dr. D. M. Sutherland: Inflammatory Conditions of the Colon.
FRIDAY.—4.15 P.M., Prof. Julian Huxley, D.Sc.: The Uniqueness of Man. (Lloyd Roberts lecture.)

ANCOATS HOSPITAL, Manchester.
THURSDAY, Nov. 26th.—4.15 P.M., Mr. Holt Diggle: Treatment of Laryngeal Cancer—Surgical Excision or Irradiation.

MANCHESTER HOSPITAL FOR CONSUMPTION, Deansgate.
WEDNESDAY, Nov. 25th.—4.30 P.M., Mr. V. F. Lambert: Demonstrations of Clinical Cases.

LEEDS GENERAL INFIRMARY.
TUESDAY, Nov. 24th.—3.30 P.M., Mr. Pain: Fracture of the Forearm.

LEEDS PUBLIC DISPENSARY AND HOSPITAL.
WEDNESDAY, Nov. 25th.—4 P.M., Dr. H. G. Garland: Recent Advances in Neurology.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
WEDNESDAY, Nov. 25th.—4.15 P.M. (Western Infirmary), Prof. S. J. Cameron: Cancer of the Uterus.

NOTES, COMMENTS, AND ABSTRACTS

THE PRESENT PLACE OF PSYCHOTHERAPY IN MEDICINE

By FREDERICK DILLON, M.D. Edin.

CHIEF ASSISTANT IN THE DEPARTMENT OF PSYCHOLOGICAL MEDICINE, UNIVERSITY COLLEGE HOSPITAL; MEDICAL SUPERINTENDENT OF NORTHUMBERLAND HOUSE MENTAL HOSPITAL

IT has become a platitude to point out the importance in treatment of the psychological aspect of disease. Recently it has been computed that 30–40 per cent. of all sickness is attributable to psychological causes and, apart altogether from the so-called functional disorders, it is now recognised that every physical illness produces a reverberation in the psychic system. The dentist, no less than the surgeon before a major operation, is compelled to give consideration to the fact that he is dealing with patients more or less in an abnormal state of mind, and that attention to the mental condition may go a long way towards ensuring the success of his ministrations. It becomes very important therefore seriously to consider the strange situation that has developed in psychological medicine and the singular paradox that whilst all are agreed as to the importance of psychotherapy there is great divergence of opinion between psychotherapists themselves on the theory and practice of the subject. A remarkable number of schools of thought have sprung into existence, each differing from the others on fundamental points; and the teaching they offer with confidence is often contradictory.

It is probable that this confusion is only a passing phase. Differences of opinion on important points arise not infrequently in the investigation of complex phenomena, and are resolved, as a rule, in the course of time as knowledge and experience accumulate. Nevertheless in the case of psychological medicine there are certain disquieting features which indicate that the trouble is more deeply seated, and that the future of the whole subject is in danger of being seriously prejudiced. The number of conflicting schools, for example, far from diminishing appears to be steadily increasing, and a bias and trend is being given to this mode of treatment which bid fair to lead it outside scientific medicine altogether.

Departures from Science

Exceptional difficulties have, of course, always stood in the way of the scientific investigation of mental phenomena. Psychology has always been intimately involved in the prevailing beliefs on ethics and religion, and any new views that might conflict with these established faiths have, not unnaturally, met with the strongest opposition. The phenomenon of resistance to new advances is a familiar one in the history of medicine, from Vesalius onwards, and it is obvious to the impartial observer that psychology is still far from having disentangled itself from non-scientific influences.

Conventional opposition of this kind from lay sources and those lacking specialised knowledge may be looked upon as normal. But the matter assumes a more serious aspect when it is realised that in this branch of medicine psychotherapists themselves, in many cases, have abandoned the purely scientific approach and claim the right to make use of other than scientific methods in the study and treatment of their patients. It does not seem to have been generally recognised how significant is this departure from scientific standards in an important department of medicine. Psychology, it is true, is one of the most complex of these departments, and progress in acquiring knowledge is likely to be slow and laborious. But is this any reason for relinquishing the method which has, so far, proved to be the only technique capable of producing accurate systematic knowledge? No analogy is to be found in any other subject. It is inconceivable, for example, that a serious claim could be made to acquire knowledge and found a system of treatment by other than scientific means in neurology or cardiology; and the onus of proof, so far lacking, is on those who consider they are capable of carrying this out in disorders of the mind.

The three main schools of psychotherapy, of Freud, Adler, and Jung, provide instructive examples. Jung has frankly admitted that part of his system goes beyond the ordinary limits of science and cannot strictly be justified on scientific principles.[1] His complicated body of teaching is thus a blend of scientific and non-scientific tenets, the latter evidently being of a mystical or religious character. Adler's doctrine, with its insistence upon the need for a regulative principle, the frequent use made of such terms as the soul, God and the devil, and the ideal of the brotherhood of man, plainly shows the large ethical element involved. Indeed it is explicitly stated that as functional nervous disorders are looked upon as diseases of the will it is impossible to regard aberrations of the will in isolation from ethics.[2] Freud, on the other hand, claims that psycho-analysis has been evolved on purely scientific lines, and follows scientific methods in its development and technique. The question whether this claim can be strictly substantiated is irrelevant to our present purposes; the important point is its adherence to accepted scientific standards.

The Empirical Outlook

Clearly no useful comparative estimate of the three systems can be made unless these significant differences are taken into account. Obviously criticism on a basis of facts and logical inference is rendered futile if the teachings under review reject facts and ordinary logical standards. Is it possible, however, that some justification can be put forward for this departure from scientific methods?

Apart from personal predilection it would appear that the motive is to be seen in the difficulties inherent in the subject, which have already been mentioned, and in the hope that along some other line of attack new means of progress may be discovered. But it is far from clear on what precise grounds this hope is likely to be realised. In the realms of ethics, religion, and æsthetics there is nearly as much conflict of opinion as in psychology itself, and the only help that could be anticipated by bringing in conceptions from these spheres would be of a purely empirical character and capable of application only to particular cases.

Empirical success, however, has unfortunately been one of the greatest obstacles to the progress of psychotherapy on properly scientific lines. Consideration of the history of the subject makes it evident, in fact, that the important distinction has been lost sight of between the empirical and the scientific. In the early period of its development psychotherapy was purely an empirical art. Mesmer is said to have been able to produce remarkable results by the hypnotic methods he employed, but the theory upon which he worked, of the action of a magnetic fluid, we know to have no scientific foundation. Suggestion, the next development of the subject, still lacks an adequate explanation, and persuasion and re-education are generally looked upon as more elaborate forms of suggestion. It was with the discovery of the analytical method of investigation and interpretation, which we owe to Freud, that the strongest hopes arose for the development of a truly scientific psychotherapy. We have seen, however, the different directions in which the three main analytical systems have diverged.

[1] Jung, G. C.: Collected Papers on Analytical Psychology, 1917, p. xv.

[2] A.B.C. of Adler's Psychology, 1930, p. 47.

The essence of scientific knowledge is accuracy, depending in the first place upon accurate observation of facts, and in the second upon accurate inference from the facts of observation. This is the basis of all science, and every creative or imaginative addition of theory or hypothesis must conform to it. Scientific method is primarily a process by which a structure of facts and inferences is acquired, and practical application, strictly speaking, can reliably be founded only upon the prior data so obtained. In a purely empirical system, on the other hand, no account need be taken of facts; indeed one of the dangers of utilising such systems arises from the facility with which facts may be ignored or modified in concentrating attention upon results. That "facts are sacred" is nevertheless an intrinsic part of the creed of every responsible medical man, and no deliberate modification of it is justified unless for exceptional reasons in individual cases.

To be utilisable, knowledge must be expressed in intelligible language, and no system of teaching should be accepted unless it is conveyed as clear and distinct ideas. This is a particularly important maxim in psychology, adherence to which would save us from the too frequent difficulties arising from the use of obscure concepts and ambiguous phraseology. Vagueness, indeed, is one of the principal dangers of psychological work, and it seems to exercise a peculiar fascination on certain types of minds, being often used as a defensive mechanism against the facing of unpleasant facts.

Successful Pseudo-science

It would be an interesting experiment to observe and analyse the results obtained by the deliberate application of an apparently rational but purely empirical method of psychotherapy. A form of treatment derived from the pseudo-science of numerology, for example, would probably provide a suitable basis for such an investigation—especially if given an impressive title such as "the Pythagorean System of Psychotherapy," and heralded by judicious propaganda.

A *rationale* could without much difficulty be improvised. We have the authority of the great Pythagoras for pointing out that Number partakes of the essence of things and is of the utmost significance for all of us. Can it not be shown that our lives are lived under the influence of personal integers and that our destinies are controlled by their obscure power? It is but a step from this to recognise that maladjustment, with its attendant train of nervous symptoms, arises from disharmony within the individual because he is, all unknowingly, attempting to pursue his way or scheme of life according to a number which is not intrinsically his. Treatment by the Pythagorean method would accordingly be designed to supply the requisite guidance in discovering the individual's significant or essential number, by living according to which the normal rhythm and harmony of life would be preserved!

From past experience there is every reason to believe that a fantasy system of treatment such as this would meet with a considerable measure of success, although based on no known scientific facts. It would in this way provide an additional illustration of the truth that good results from a method of psychological treatment constitute no proof of the validity of the supporting doctrine. We should not, in view of the absence of a factual basis, expect the achievements obtained with this type of therapy to be permanent or dependable. In those cases in which apparent "cures" have occurred in such circumstances there is evidence that they are probably won at the expense of loss in some other department of the mind. According to our present knowledge of the working of the psychic system we are only able to attribute the results of such empirical methods to the action of suggestion. This, as we have already observed, is still awaiting an explanation and forms in fact one of the most important problems in the sphere of psychological medicine, from its far-reaching influence in the mind and the obscurity of its mode of operation. The development of an accurate and scientific system of psychotherapy is rendered, in consequence, difficult of attainment. But if the subject is not to remain indefinitely at the empirical level the problem is one that must be squarely faced by every practising psychotherapist.

Duty of the Medical Psychologist

The conclusion forced upon us is that a great part of the psychotherapy practised to-day is empirical and cannot be regarded as strictly scientific. It should be self-evident that a genuinely scientific system of psychological treatment can be developed only by following the principles and method which have guided the progress of medical science in every other department. That is to say, it must be based upon an established and accepted foundation of facts concerning the structure and function of the mind. It may be that this necessary foundation is not yet available, in which case we must be content with methods of therapy which for the present are frankly accepted as empirical. Or it may be that the true facts are being obscured by the contending claims of the different schools of thought. It should, however, be an obligation upon every psychotherapist to endeavour to promote the progress of the subject on properly scientific lines and to become more clearly "method-conscious" in this department.

The therapeutic aspect of psychological work is important and must receive due consideration; but of far greater ultimate importance is the need to secure a basis of knowledge upon which all applied methods should be founded. It will tend only to increase the difficulties in an already complex subject, and make confusion worse confounded, to blend scientific with non-scientific elements—unless with the clear understanding that this is done as part of a purely empirical procedure in the absence of something better. Contradictory principles cannot both be true, and consistent progress will come only if we keep in mind the fact that when a proposition is affirmed its contradictory is thereby repudiated, and that a law of theory once maintained debars assent to certain other formulations.

The distinction between the empirical and scientific is of particular importance in psychotherapy, and any system which professes to be scientific has a greater claim on our attention and critical judgment than others which, either expressly or by implication, exist merely or mainly as instruments of treatment. Difficult though the problems at issue may be, it is obvious that they require to be dealt with in a more realistic spirit than hitherto if psychotherapy is to take its place on an equal footing with the other branches of medical science.

PHARMACOLOGY AS WELL AS THERAPEUTICS FOR NURSES

OPINIONS differ considerably about the amount of purely medical knowledge which should be taught to a nurse. It certainly seems undesirable to expect her to commit to memory too many facts and theories which it is not her place to apply in the practice of her profession. Many books intended primarily for the nursing profession might reasonably be supposed to have been written for the medical student. This applies especially to those which reach us from the United States. The author of one recently published on materia medica, pharmacology, and therapeutics[1] states in a foreword that she has attempted to persuade the student to reason out the action of drugs from a knowledge of physiology, and she certainly

[1] Materia Medica, Pharmacology, and Therapeutics. Second edition. By Maude B. Muse, R.N., A.M., Assistant Professor of Nursing Education at Teachers College, Columbia University. London and Philadelphia: W. B. Saunders Co., Ltd. 1936. Pp. 634. 12s. 6d.

presupposes a considerable degree of basic scientific knowledge. It is for example assumed that the reader understands what is meant by the pH of a solution. The nurse is, moreover, apparently expected to memorise much of the information, since each chapter is followed by questions and tables which have to be filled up from memory. Medical examinations are apparently threatened with a new horror, the introduction of analogy questions on the lines of intelligence tests. The victim has to fill in the missing terms in such statements as "Phenol: benzine: ——: emodin, and —— may, in overdoses and frequently repeated, cause nervousness, headache, palpitation, and hypochondria."

The information given in the book is on the whole accurate and up to date. Criticism is in any case disarmed, since the authority for practically every statement made is given in the form of page references to standard text-books on pharmacology. Since, however, standard works tend to date rapidly this has led to a few misstatements. For example, theelin (p. 435) is not now obtained from the urine of pregnant females but from that of horses, and insulin (p. 579) is no longer standardised by clinical assays but on animals; a polygram tracing (p. 278) is described as an electrocardiogram. We are glad to see emphasis laid on many aspects of therapy of particular importance to nurses. These comments bear the stamp of personal experience. The chapter on physiotherapy is particularly well done, and there is an interesting historical account of the transition from medieval medicine to modern therapy. The book is excellently illustrated.

GENESIS CHAP. I. IN THE BIBLE OF THE FUTURE

To the Editor of THE LANCET

SIR,—Can any of your readers tell me if the poem of this name was written by the late Dr. Arthur Giles? He claimed to have found the work when a student at Edinburgh, but this may have been his modesty; though no copy has been found among his verse

> "And (man) developed a thumb
> For that he had need of it."

are two lines from this Darwinian version of Genesis of which I am anxious to obtain a copy.

I am, Sir, yours faithfully,

Enfield, Middlesex, Nov. 15th. T. JOHNSTON.

AN OBSCURE CASE OF VERTIGO

R. A. G. writes: I would suggest that *M. L. J.'s* patient's attacks of vertigo may be due to a disturbance of the ocular movements. The notable features of the attacks—namely, that they are induced by sudden movements of the head, or by postural change, and that they are apt to occur on waking in the morning—would fit in well with the diagnosis of paresis of an ocular muscle. When the degree of muscular weakness is slight the ocular movements are to a certain extent under control, and therefore its presence is demonstrable only by a very careful examination.

TO OLD MEMBERS OF THE LIVERPOOL MEDICAL SCHOOL

THE following letter reaches us from Prof. Henry Cohen and Prof. W. H. Wood, respectively chairman and dean of the Liverpool faculty of medicine. "Mr. Peter Duncan, chief laboratory assistant in the medical school of the University of Liverpool, attains the age of 73 this month, and will be retiring in December, 1936, after 43 years' service. It is the intention of the faculty of medicine to make him a presentation in the form of a cheque on his retirement at Christmas. It was thought that past members of the staff and old students of the medical school might wish to contribute to the presentation. It has been decided that donations shall be limited to one guinea. Any former member of the staff, or old student desiring to contribute, should forward the amount to the faculty of medicine, c/o the Dean, not later than Dec. 16th."

CORRIGENDUM.—We are informed that an advertisement supplied to us on behalf of Glaxo Laboratories Ltd. and published in our last issue contained an incorrect statement of the new prices of Ostocalcium Tablets. The reduced prices are: 2*s.* 3*d.* for 50, 4*s.* for 100, 12*s.* 6*d.* for 500, and 17*s.* 6*d.* for 1000.

Appointments

ANDERSON, MARY, M.B. Dub., has been appointed Assistant School Medical Officer for Newcastle upon-Tyne.

BARLOW, D. S. M., M.B. Lond., F.R.C.S. Eng., Surgical Registrar at the London Lock Hospital.

BATEMAN, G. H., B.M. Oxon., F.R.C.S. Eng., Assistant Surgeon to the Ear, Nose, and Throat Department of the Belgrave Hospital for Children, London.

BINTCLIFFE, E. W., M.B. Lond., F.R.C.S. Eng., Surgical Registrar to the Royal National Orthopædic Hospital, London.

BIRNIE, G. L., M.B. Edin., Assistant Medical Officer at the City Hospital, Nottingham.

BLACKBURNE, M.B. Lond., F.R.C.S. Eng., Resident Surgical Officer at the Hull Royal Infirmary.

COLVER, THOMAS, M.B. Sheff., M.R.C.P. Lond., Out-patient Medical Registrar at the Hospital for Sick Children, Great Ormond-street.

COX, M. CHARLTON, B.Sc., M.R.C.S. Eng., Junior Lady Assistant Medical Officer at the Winson Green Division of the City of Birmingham Mental Hospital.

DOLLAR, J. M., M.S. Lond., F.R.C.S. Eng., D.O.M.S., Hon. Ophthalmic Surgeon to the Elizabeth Garrett Anderson Hospital.

FITZGERALD, F. P., M.B. Dub., F.R.C.S. Irel., Surgical Registrar to the Royal National Orthopædic Hospital, London.

FOX, R. W. S., F.R.C.S. Eng., Surgical Registrar at the Hospital for Sick Children, Great Ormond-street.

HEANLEY, C. L., B.Chir. Camb., F.R.C.S. Eng., M.R.C.P. Lond., Surgical First Assistant and Registrar at the London Hospital.

HEATH, P. A. M., M.R.C.S. Eng., Assistant Medical Officer to St. Andrew's Hospital, Thorpe, Norwich.

MCBRIDE, CHARLES, M.B. Belf., Tuberculosis Officer and Medical Superintendent at the Stanfield Sanatorium, Stoke-on-Trent.

MONKHOUSE, J. P., M.B. Lond., F.R.C.S. Eng., Consulting Laryngologist to the King Edward Memorial Hospital, Ealing.

MORGAN, C. NAUNTON MORGAN, M.B. Lond., F.R.C.S. Eng. Assistant Surgeon to St. Bartholomew's Hospital, London, and Assistant Director of the Surgical Professorial Unit.

PASSE, E. R. G., F.R.C.S. Eng., D.L.O., First Assistant and Registrar to the Ear, Nose, and Throat Department of the London Hospital.

PEEL, J. H. B.M. Oxon., F.R.C.S. Eng., M.C.O.G., Assistant Obstetric and Gynæcological Surgeon to King's College Hospital.

RAVEN, R. W., F.R.C.S. Eng., Assistant Surgeon to the Hôpital et dispensaire français, London.

ROBERTS, R. I., M.R.C.S. Eng., D.M.R., Assistant Hon. Medical Officer to X Ray Department of the Royal Hampshire County Hospital, Winchester.

ROBERTSON, K. M., M.D., M.R.C.P. Lond., Hon. Physician in Ordinary to the Royal Hampshire County Hospital, Winchester.

SERVANTE, S. Q., M.R.C.S. Eng., Resident Surgical Officer at the City Hospital, Nottingham.

STRONG, E. C. N., F.R.C.S. Eng., Assistant Surgeon to the Birmingham Ear and Throat Hospital.

WALTON, L. H. F., M.R.C.S. Eng., Physician in Charge of the Department of Physical Medicine at the Prince of Wales General Hospital, London.

WYSE, R. W., M.B. Glasg., Casualty Officer and Fracture House Surgeon at the Chesterfield and North Derbyshire Royal Hospital.

Department of Health for Scotland.—The following appointments are announced:—

KENNEDY, T. D., M.B. Edin., Senior Regional Medical Officer in Glasgow;

MUIRHEAD, A. J., M.D. Edin., D.P.H., Regional Medical Officer in Dundee; and

FLEMING, C. M., M.D. Glasg., Regional Medical Officer in Glasgow.

Royal Cancer Hospital (Free), London.—The following appointments are announced:—

FLOOD, P. A., M.R.C.S. Eng., D.M.R., Senior Assistant Radiologist;

NOWELL, STANLEY, M.B. Manch., D.M.R., Second Assistant Radiologist; and

ADAMS, S. B., M.B. Brist., D.M.R., Third Assistant Radiologist.

Certifying Surgeons under the Factory and Workshop Acts: Dr. P. T. T. MACDONALD (Kingswood District, Gloucester); Dr. G. D. Roche (Turriff District, Aberdeen); and Dr. D. B. SMITH (Waltham Abbey District, Essex).

Medical Referee under the Workmen's Compensation Act, 1925: D. S. PRACY, F.R.C.S., of Atherstone, Warwickshire, for the Atherstone, Coventry, and Nuneaton County Court Districts (Circuit No. 23).